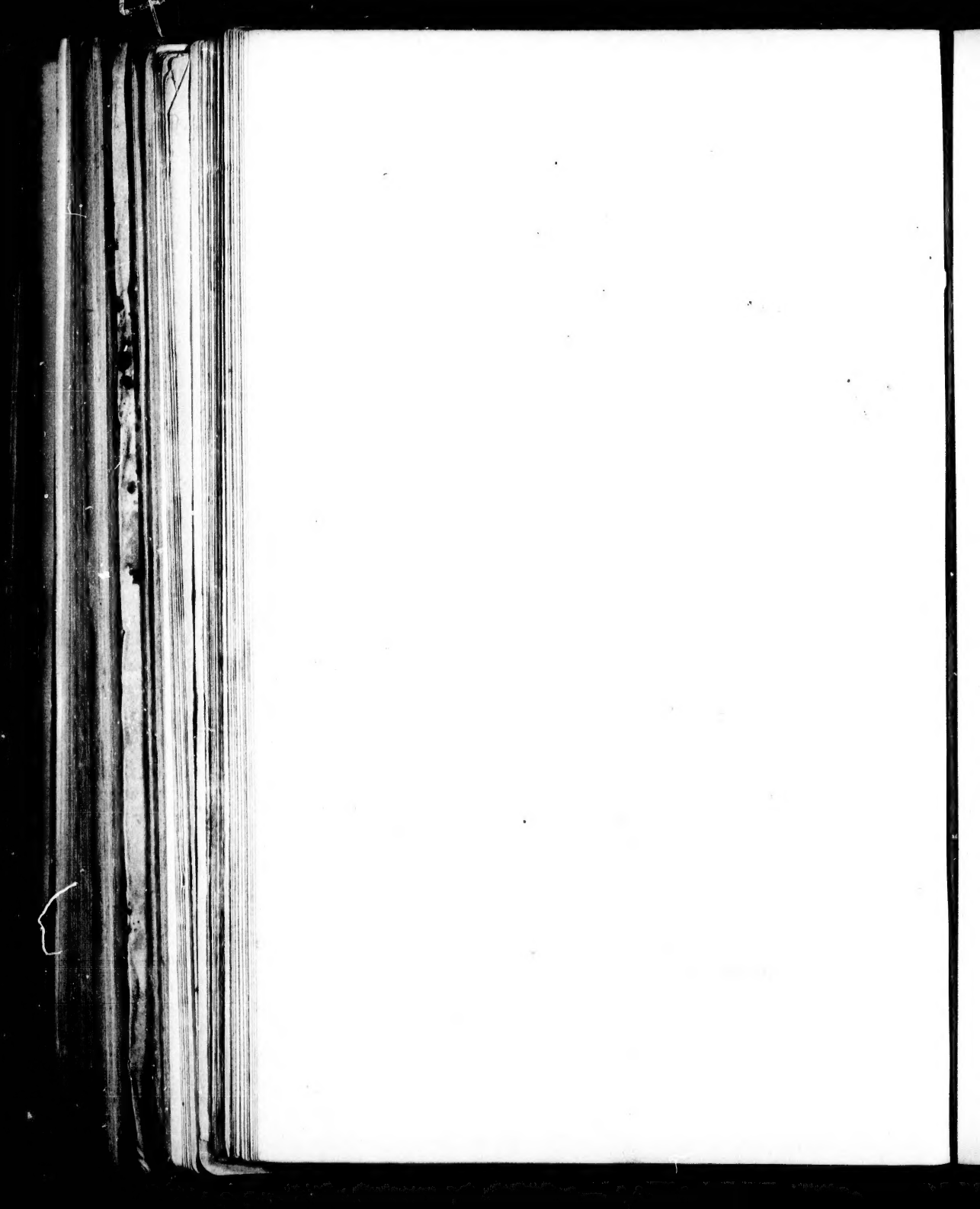




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SECOND
ANNUAL REPORT
OF
THE CHIEF COMMISSIONER
OF
PUBLIC WORKS.
1856.



FREDERICTON :

J. SIMPSON, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY.

1857.



GENERAL REPORT
OF THE
CHIEF COMMISSIONER OF PUBLIC WORKS
FOR THE YEAR 1856.

OFFICE OF BOARD OF WORKS,
Fredericton, January, 1857.

To His Excellency the Honorable John Henry Thomas Manners-Sutton,
*Lieutenant Governor and Commander in Chief of the Province of New
Brunswick, &c. &c. &c.*

MAY IT PLEASE YOUR EXCELLENCY,

The undersigned has the honor to submit the following General Report for the year 1856, in accordance with the provisions of the Act 18 Vic. cap. 7, sec. 2, by which it is enacted that "The Chief Commissioner shall annually make a Report to the Governor in Council of all the Great Roads, and any other Provincial Work, (excepting Bye Roads,) upon which public money has been expended." To this Report are appended the following statements, viz :—

A.—Statement shewing the amount expended by the Board of Works during the year, under the different heads of Supervisors' Expenditure on Great Roads, Expenditure on Bridges, Light Houses, Government Buildings, Dredging Machine, Navigation of Rivers, Travelling Expenses, and Contingencies. Also, Statement of Warrants on the Provincial Treasury, and General Abstract.

B.—Statement shewing amount of Grant to each Road and Supervisor, with the length of Road, number of Bridges costing £25 each and upwards, and Estimate of Expenditure for next year.

C.—Statement of amounts over or under-expended by the Supervisors, on the 1st of November 1856.

D.—List of new Bridges built the last season, with principal dimensions and cost of each.

E.—Colonel Maclauchlan's Report on the improvement of the Navigation of the River Saint John.

GREAT ROADS AND BRIDGES.

GENERAL OBSERVATIONS.

The recent formation of the Board, the late date at which the present Commissioners accepted office, and the consequent impossibility of at once introducing the whole of the changes necessary to the complete working of a new system, have not permitted during the past year any great alteration in the method of management heretofore employed, and with the exception of some of the larger Bridges, and new works specially superintended by this Department, the whole of the ordinary Road work and Bridge building have been carried on under the former system of Supervisorship, aided by plans and surveys, when necessary, from this Office. In the earlier prosecution of these Public Works, no better system could probably be devised, than the employment of Supervisors, who are by their local influence and position necessarily acquainted with the requirements of their own district, and personally interested in its welfare and development; and considering the difficulties that had to be encountered, and the comparatively small means, compared with the length of Road to be covered, that have been placed at their disposal, it must be admitted that the present state of the Roads and Bridges is generally creditable to the men who have had the management of these public thoroughfares. The number of these Roads have however increased, the annual requirements for enlarged facilities and superior workmanship have grown with the progress of the country; and the augmented travel has rendered the repairs

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and improvements of the Roads a matter of more constant care than formerly, and placed it beyond the means of private individuals, otherwise occupied, to bestow the necessary time and attention to a rather, for them, unprofitable employment. The class of works that have been recently undertaken, more especially, have required a constant attention and vigilance, that could not have been bestowed upon them under the old system, whilst the preparation of plans, and the necessary office work, would have been a serious addition to the already disproportionate expense of management. The number of Supervisors has been reduced this last year from forty eight to thirty six, and the remuneration from £2,500, or an average of over £52 each, to £1,500, or less than £42 average; no per centage having been paid upon the expenditure by this Board on the heavier and more permanent works that have been undertaken; and as more of these works fall within the operation of the Board, and the consequent amount to be expended upon minor repairs is reduced, the amount of per centage to Supervisors would soon cease to recompense any one undertaking the office; the length of Road increasing, and involving a loss of time and expense of travelling altogether unrequited by the usual 10 per cent. allowance. The Chief Commissioner would therefore humbly suggest for Your Excellency's consideration, the propriety of modifying the present system, and so far reducing the number of districts, as to occupy the whole time and attention of each Supervisor, who would be paid by salary from this Office, acting immediately under the orders and instructions of the Chief Commissioner, and reporting constantly every particular of his division.

The appointment of the Supervisors has hitherto been, by law, in the month of March, their duties commencing on the 1st of April, and the term for one year. It is further required that no day labor shall be done after the 1st of October, and that the Vouchers and Accounts of the expenditure shall be sent to the Audit Office before the 15th of November, which virtually closes the Supervisors duties. This arrangement precludes any work being done during six months of the year;

the best season for procuring all sorts of timber and sawn lumber, for hauling supplies, gravel, building stone, and permanent materials; for erecting Bridges, or doing any repairs that temporarily interrupt the thoroughfare; and the only time when the sap of the trees is down, and a proper description of timber can be procured for the culverts and smaller Bridges. A great proportion of the outlay in the construction of the Roads, and by far the greater quantity of repairing afterwards, is thus compelled to be done at the wrong season of the year; and the almost universally expressed wish of the Supervisors to have the material of the Bridges obtained in the winter, when the expense is probably one half, and the timber better, is necessarily disregarded, from the Accounts at that season being closed, and no provision having been made for the carrying on of any description of road work. For the same reason, and this is especially the case in opening out new Roads, or making deviations, it is almost impossible to use any description of timber but such as may be found in the neighbourhood; the haulage of stone, excepting upon the snow, could not be attempted, and the procurement, in short, of any thing but the worthless soft woods bordering the Creeks and Rivers, which it is necessary to cross, being rendered difficult and expensive by this necessity of summer work. It has not been from want of knowledge, or disregard of the public service, that many an inconsiderable stream in New Brunswick has cost as much as would have built a cut stone Bridge, but from the necessity of using the native growth of a swampy bottom, aggravated by being cut at the worst season of the year. The rapid destruction and rotting of these Bridges has not only kept them in a perpetually rickety condition, but has absorbed so much of the means at disposal, as to leave the road-bed as a minor, or at least a more neglected, consideration; and thus in some swampy and low-lying districts, the state of the road has been totally disregarded, and become bad, not from penurious grants on the part of the Legislature, or reckless expenditure on the part of the Supervisor, but because the whole sum at disposal has been required every summer to replace the rotting piles of hemlock

logs, by other structures equally short-lived, and equally extravagant in their cost, in comparison with the duty performed.

The manner of letting the Road contracts is another evil in the system, and has not been favorable to the production of sound work. The Supervisor is compelled by law, to sell the making of the Roads, &c. by auction, and to accept the lowest bid. The parties tendering are generally the poor back settlers of the district, always anxious to obtain ready money employment, perfectly ignorant of the value of the work, or how it is to be done, and led on by a spirit of competition to make some of the most egregious offers and inconsistent engagements. These bids are generally so many unfortunate guesses, and the work has to be performed often at 1s. and 1s. 6d. per day, without any knowledge of the commonest principles of Road making, under no supervision, and in the most superficial and rudest manner possible. Some little latitude in letting these contracts, and the constant attendance of a person who can point out exactly what has to be done, giving particulars and quantities, and whose duty it would be to visit the work frequently whilst in progress, would obviate a part of the difficulty, prevent the present trickery and irregularity, and ensure a better system of working, and a more faithful and efficient performance of the contract.

On lines not yet opened through, and when the Road is only partially completed, the present legal method of doling out these small contracts, without any adequate supervision, has been extravagant and useless, and caused some of the Great Roads to be practically unserviceable as means of through communication. The outlay year after year, fails to complete the connexion and open the district to through travel, causing the settlements to remain isolated and unknown, and the Bridges and Road work are decayed, before they are fairly brought into use. Eight of the forty two Great Roads are still unfinished the whole distance, and the want of four of them, at least, is a great drawback upon the settlement and development of the districts through which they pass. To illustrate the heavy expense of this unfinished work, and the failure of

the present system to fulfil the requirements of the Great Road Service, the line from Oak Bay to Eel River may be instanced. This Road, if completed, would form an important line of communication from St. Andrews, St. Stephens, Calais, and Baring, to the Agricultural districts of Woodstock and the Upper St. John, saving at least twenty miles, over the present route through the State of Maine, via Houlton, and opening up two or three very flourishing settlements. In 1846, of the sixty miles of this road, thirty two were in good travelling condition, the remainder were more or less completed, and the only two Bridges of any size on the whole road, occurred in this unused portion, and were then in good order. In ten years, Grants to the amount of £4,930 have been expended, besides the Statute labour, which has probably been sufficient to maintain the travelled portion of the line. The Road is still impassable throughout, the two Bridges have decayed, and one of them been rebuilt the last season at a cost of £100; and of the twenty eight miles still unfinished, the Supervisor reports, that fifteen miles at the north end will require £2000 to complete it for ordinary traffic.

The Roads from Dead Water Brook to Saint Stephens, being the main line from Fredericton to the United States; and from Lower Trout Brook to Magaguadavic, completing the communication from Fredericton to the Town of Magaguadavic, would form, if opened through, two very important lines of travel, and are at present but partially serviceable from their unfinished and impassable condition, where they connect with the Fredericton and Saint Andrews Road.

The number of miles of Great Road in the Province is 1,630; of larger Bridges, 470; and of smaller ones, about 1,400. Of the former only 3 are entirely of imperishable materials, and 36 have stone abutments with wooden superstructure. About 100 of the larger Bridges have cedar abutments, well built, and of durable character; the rest are principally of hemlock, much of it cut the wrong season of the year, peeled for the sake of the bark and to lighten the haulage, and improperly notched down and secured; these Bridges all

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fail within 12, and many of them within 10 years, and the perpetual repetition of the same description of work, has made some of the worst Roads in the Province by far the most extravagant in outlay.

The arrangements for the past year had been completed, the greater portion of the work either done or contracted for, and the annual appropriations so far expended before the present Commission accepted office, that but little remained for them but to assist as far as possible in carrying out the views of their predecessors, and to collect as much local and general information as would prepare them, another season, for a more complete and thorough organization of the important duties under their charge.

GREAT ROADS.

No. 1.

From Saint John to the Nova Scotia Line.

132 Miles.

This Road throughout is in a good state of repair. The whole of the Bridges damaged by the great Freshet of 1854, have been rebuilt in a substantial and durable manner, and with the exception of the one at Hampton Ferry, are all open to the public. The particulars of this Bridge, and also of the Hammond River and Missiquash, built under the direction of the Board of Works, and finished this season, will be found under their respective headings. Besides these, two new Bridges have been built over the Mill Stream and Fox Creek, by the Supervisors of the districts. The latter is a short Bridge on framed bents of Spruce; the former has Hachmatac abutments hewn 10 inches square, and bolted together from top to bottom; 75 feet span, supported with Queen post trusses of Pine and Hachmatac, and Pine plank flooring, the superstructure planed, and painted with three coats.

Besides the new Bridges, the particulars of which will be found in the Appendix, some heavy repairs have been put upon

the others. The long Bridge across the Aboideau near Saint John, has been walled up on each side, raised solid with stone, and fenced, at a cost of £125.

The Bridge over the Marsh at Groom's Cove has been re-framed and partially refloored, at an expense of £55. This Bridge is now nineteen years old, and will not stand over two years more, the present repairs being merely to keep it safe till the new one is built. Its original cost was about £400, and when it is replaced it should be with a solid embankment, and a water course of about 10 ft. span. The cubical contents would be about 12,000 yards, and the total cost, including culvert and railings, will be, complete, about £800.

The Bridge at Roache's, 45 miles from St. John, built in 1855, was strained by having a herd of cattle driven over it in a body, and has been this season strengthened and repaired at a cost of £24, to guard against a recurrence of the mischief. This Bridge has two 75 feet spans, supported by the ordinary truss, and is only 16 feet between the railings, which is 4 feet less than the usual breadth, and shews the advantage of having these spans kept within narrower limits than might be necessary on long framed Bridges; as the weight of such a drove on a breadth of 22 or 24 feet, might under many circumstances have caused the destruction of the whole.

Between Saint John and Hayward's Mills, 65 miles, there is only one small Bridge, excepting Groom's Cove mentioned above, that will require rebuilding, it is hoped, for a number of years. This is over a ravine at Morton's, Upper Sussex, has been standing 17 years, and will cost next year about £125 to replace it. There is however a very heavy traffic, and the repairs of the Road are estimated at £500 per annum, for this half of the distance.

Between Hayward's Mills and the Nova Scotian line, 67 miles, the expenditure the last season has been principally in turnpiking and gravelling, which though expensive, from the distance the gravel has to be hauled in some places, makes the most durable and ultimately economical road. The Bridges will want some repairs next season, principally hand-railing and new covering, and the estimate for all purposes is £700.

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The Bridge over the Tantamar River, on Town's lattice principle, has been for some time in a bad state. Last Spring the centre pier was again badly damaged by the ice, and several of the beams and braces of the truss were broken. Its reconstruction next year will be necessary. The remaining large Bridges are in a very fair condition, and unless injured by ice or accident, will need nothing for some time, but the ordinary repairs.

No. 2.

From Saint John to Saint Andrews.

66 Miles.

From Saint John to Lepreau, 26 miles, the Road is in very fair condition; from thence to Magaguadavic the Road is flat, the drainage defective, and the ditches obstructed with fallen logs and underbrush, requiring skirting and ditching most of the distance; beyond Magaguadavic, to Saint Andrews, it is in much better condition, but rough and hilly.

During the last year the Board of Works have erected a new Bridge over the Musquash, and another new Bridge across the Popologan has been built and paid for out of the Great Road money. The dimensions and particulars of the Popologan Bridge are given with the others built by the Road Supervisors in Appendix D.

No new Bridges of large dimensions will be necessary on this Road for some time, but during the next season there are four smaller ones which it will be necessary to rebuild, at a total cost of £260, and it is desirable that the timber for these should be procured during this Winter, especially for the New River, where the haulage will be from four to six miles, and the procuring of proper materials, except in the Winter, difficult and expensive. The estimate for next year, including the new Bridges and skirting the Road from Lepreau to Magaguadavic, is £700; and besides this necessary expenditure, there are some steep pitches and bad places, especially between Saint Andrews and the Digdeguash, which might be altered or avoided at trifling expense, and which, when judiciously effected, will be a great improvement to the travelling.

No. 3.

From the Bend to Shediac.

14 Miles.

This Road is in tolerable travelling condition, but the material in the neighbourhood is not of a good quality for Road making, and the traffic upon it is so great, and annually increasing, that it requires in proportion to its length, a large sum to keep it in repair. There are no Rivers on the route, and the largest Bridge on the line has been rebuilt the last season at an expense of £18. The Grant last year was £200, and the estimate for this year is the same.

No. 4.

From Dorchester to Shediac.

21 Miles.

It would require a large outlay to put this Road in thoroughly good condition, the Bridges are old, and the Road material is not good. The greater portion of the annual Grant has generally been absorbed in the necessary repairs to the Bridges, leaving but a small sum to make any permanent improvement elsewhere. During the last season the Memramcook, and Scadooc West Branch Bridges, have been repaired; but the former is still very much out of order, and ought to be rebuilt; and both it and the Dorchester Bridge will need next year heavy repairs to keep them passable and safe. The estimate for these two is £90, and the rest of the Road can be kept to its present condition for about £60, making a total requirement of £150 for the incoming season.

No. 5.

From Shediac to Richibucto.

36 Miles.

This Road though only 36 miles long, has in that distance 23 Bridges of large size, 9 of smaller dimensions, costing from £12 to £25 each, and 94 culverts costing from £2 to £10 each. The Bridges across the Cocagne, Shediac, Big and

Little Buctouche, and Richibucto, are collectively upwards of one and a quarter miles in length, and cost together £6,900, or about £1 currency per running foot.

During the past season no new Bridges have been built, but within the last two years, all the Bridge coverings have been renewed, and the other portions substantially repaired, so that excepting accidents, there will be no new Bridges to build, or heavy repairs to make next year. Probably £50 will do for the Bridges. The side drains for the greater part of the Road have never been cleaned out since the Road was made, and other portions are worn flat, but it is generally in good order, and for the next season £250 will be sufficient to maintain it in the same condition. The large Bridge across the Richibucto begins to shew signs of weakness, but will probably not require any outlay upon it for some time to come. It was built in 1848, and cost £2,400.

The culverts in this district require renewing every sixth year, the covering of the large Bridges will scarcely stand five years, and all logs above low water mark require renewing every fifteen years; the present satisfactory condition of these structures is therefore above the average, and next year's estimate of £300 is consequently less than the ordinary annual requirement of the Road.

No. 6.

From Richibucto to Chatham.

40 Miles.

During the past year the Bridge across the Big North West Richibucto has had 240 feet of the south end rebuilt at a cost of £135; and the north end built in 1845, has been thoroughly repaired at a cost of £100, making the whole equal to a further durability of 15 years. The Bridge across the Little Bay du Vent has also been repaired, but will require entirely rebuilding next year. The rest of the Bridges are in a very good state, and will not need more than occasional repairs for 4 or 5 years. The Road generally is in a fair travelling condition.

From Chatham to Black River, 8 miles, has been thoroughly

repaired this season, and is now in very good order ; from thence to Dickens', 8 miles, is low swampy land, many parts requiring to be turnpiked ; thence to Kouchibouguac, 10 miles, has been repaired lately and is in a very fair state ; to Kouchibouguacis, 7 miles, will require some work next season ; and to Richibucto, 7 miles, has been nearly all turnpiked this year, but from the nature of the soil, which is nearly all clay, and from the heavy travel, is liable to be cut up. The total estimate for next year, including the new Bridge, which will cost £6¹, is £400.

No. 7.

From Miramichi to Pokemouche.

62½ Miles.

The annual appropriations on this Road have been hitherto principally expended in opening the line through to Pokemouche, and dispensing, as far as possible, with the inconvenience of the numerous ferries. The amount left for the Road itself, after making the necessary repairs to existing Bridges, has been consequently too small to keep it at all in proper condition, and it is now in many places worn so flat as to retain the surface water. This is especially the case above Tabusintac, where the Road was originally badly located, and where two important deviations have been laid out, to complete which will involve the construction of three miles and a half of new Road, and a further outlay of £375. Two of the old Bridges on the line are very much decayed, and one especially at Alex. Stewart's is now in a dangerous state, and must be rebuilt next year.

The principal work of the year has been the Bridge at the Little Tracadie, to supersede the Ferry, which is now complete, except the railing. Up to the date of the last Report £240 had been expended in procuring materials, and during the past season, the erection and completion of the Bridge at a further expenditure of £575 has been successfully effected. The whole structure is 617 feet long, has two spans of 70 feet each, and a draw to allow boats to pass, the remainder being

built up solid with hemlock logs, cut in the winter, well fastened down, and covered with gravel, for a road way. The spans are supported by double Queen post trusses, the materials of which, as well as the stringers and flooring, are entirely of white pine. The whole cost of this Bridge has been up to the present time £813 14 8, of which £100 was expended in 1854, £138 10s. in 1855, and £575 4 8 in 1856. Of this last £50 has been derived from a special grant of the County of Gloucester, and the balance from the Great Road money. The draw, though not included in the original estimate, was subsequently found necessary and has been included.

The next heavy expenditure on this Road will be the Bridge to supersede the present Ferry at Tabusintac, thirty four miles from Miramichi. The breadth of the stream at this place to be spanned originally was 1600 feet, and by reference to the last Report, it will be seen that at that date 1100 feet at the north end had been completed, and the remaining 500 feet, to cross the current, was estimated to cost £700. Since then the arrears on the part finished have been discharged, and a contract has been let for the supply of the whole of the timber for the remaining portion, on very favourable terms. This timber is to be on the ground by the 1st of June next, the hemlock being all cut during the present winter. As at Little Tracadie, it is found necessary to introduce a draw for the purposes of navigation, and the estimate includes beside the construction of a Bridge over a Hollow at the north end of the present Bridge, being in fact a continuation of it, and equally important. With these additions the cost of completion will be about £900, including the contract for the timber recently let, which amounts to £328 6 2. When this Bridge is completed, there will only remain one ferry, across the Big Tracadie, between the Pokemouche and Miramichi. The estimate for the next year includes £120 for the Bridge at Stewart's Brook, £150 for general repairs to Roads and Bridges, and £330 for timber, &c. for Tabusintac. Besides these necessary expenditures, amounting to £600, there are still to complete the alteration at the north side of Little

Tracadie £250, the deviation at Big Tracadie, $1\frac{1}{4}$ mile long, £125, and the erection and completion of Tabusintac Bridge £500, a portion of which may probably be postponed to another season.

No. 8.

From Bathurst to Pokemouche.

51 Miles.

The greater portion of the expenditure the last year' has been upon the Road, which had fallen into very bad condition. More than 12 miles have been thoroughly dressed up and repaired at a cost of £130. One small Bridge has been built, and repairs made upon 8 others. The south abutment of the Bridge over the North Branch of Caraquet, 32 miles from Bathurst, built in 1847 of small sapling pine, sided, and notched down close, then filled up with marsh mud and gravel, having slipped from its place about 3 feet down stream, was contracted this summer to be emptied and restored to its position, but it proved so decayed as to involve the building of an entirely new abutment. This will require to be attended to, and it is proposed to reconstruct it altogether of cedar. Besides this there are two other Bridges which will require rebuilding next year; both of them are now 20 years old, and very much dilapidated. The estimate includes £300 for these three Bridges, and £100 for the general repairs of the Road and culverts; making a total of £400 that will be necessary for next year. £400 of last year's Grant was retained in the hands of the Board for the purpose of completing 900 feet of a block on the north side of the present Caraquet Ferry, in addition to two Special Grants for the County of Gloucester, which were estimated to be sufficient to procure the timber for the same. The particulars of this proposed expenditure are given in the last Annual Report, but the appropriations still remain undrawn from the Treasury, the year being too far advanced, when the present Commissioners accepted office, to permit the advantageous expenditure of the same this season

No. 9.

Bathurst to Belledune.

23 Miles.

This Road is now in a very good state of repair, and the Bridges, though most of them 12 or 15 years old, are generally in good preservation. One new Bridge has been erected this year, and repairs have been put upon two others to make them last four or five years longer. The gravelling of the Road, and the substantial repairs that have been made from time to time, and the general use of cedar in the Bridges, have given a durability and character to them very superior to those on many other lines. New covering will be necessary on two Bridges next season, which, with the ordinary repairs to the Road, will require £200, a sum which will probably be sufficient for some time, as no heavy repairs or new work are expected to be necessary for three or four years.

No. 10.

Belledune to Metis.

62 Miles.

The Road from Belledune to Jacquet River is well made, drained and gravelled; from there to River Charloe, 14 miles, is worn flat, and wants regravelling at an expense of 1s. 6d. per rod, or £336. Thence to Dalhousie and Campbellton is in good order; and from Campbellton upwards, 16 miles, is soft and undrained, and will require heavy repairs next season. A new Bridge is required over Eel River, which will cost probably £700; the present one is much decayed and cut with the ice, and will probably not be able to withstand the next Spring freshet.

The outlay the last year has been principally expended upon the culverts, drains and side ditches, and in gravelling. Two new Bridges have been built, and four old ones substantially repaired.

The estimate the next season, exclusive of Eel River Bridge, includes an embankment 386 feet long to form an approach to

Jacquet River Bridge, which requires wharfing up to protect it from the high tides, and railing in with the Bridge, £80; a ravine at McNeil's, which requires wharfing up, is the worst place on the line, and at present dangerous, £50; repairing Road above Campbellton, £300; and regravelling half the distance from Jacquet River to River Charloe, £170. Total £600. There are 29 large and several small Bridges on this line, and a principle has been adopted with the short spans and deep ravines that seems admirably to answer the purpose. The timber employed is altogether cedar logs wharfed up a certain height to form the abutments; then three tiers of stringers, with cross-ties every 9 feet between each tier, the upper tier supporting a row of cedar poles, laid close together, over both abutments and span, and the whole brushed and covered with gravel. This superstructure is as durable as the Bridge itself, protects the timber from the wear and weather, saves all hewing, sawing or fitting together, and employs the cedar in its natural and most advantageous shape; and as the piers, abutments, stringers and flooring are all of the same material and equally protected, the decay is dependent only upon the well-known properties of the timber, and its freedom from internal rotting. Bridges of this sort may be expected to last without important repairs for 40 years, whilst in point of original cost, they compare favourably with any structures in the Province. The average cost of the 18 now on this Road being only about 10s. per running foot, whilst the average on all the Great Roads together is more than double this sum.

No. II.

Newcastle to Bathurst.

50 Miles.

This Road is very much out of repair, and will require a heavy outlay to make it equal to the line round the coast between the same points. From Bathurst to Tabusintac, the Road is especially bad, the greater part of it requiring to be turnpiked, gravelled, and in many places widened, the soil being a heavy clay, with a nearly total absence of gravel.

The Bridges over the Bartibog and Little Bass Rivers are completely decayed, and must be renewed next year, and the north span and abutment over Tracadie Brook is also in a bad state, the other portion of the Bridge having been built new in 1853. The other Bridges are nearly new, and generally in good order. During the last year new Bridges were built at Douglastown, and over the Little Escadilie, particulars and cost of which are in the Appendix. The estimate for the ensuing year, includes the rebuilding of the Bartibog Bridge £200; Little Bass River £100, and part of Tracadie Brook £120; repairs and re-covering Bridge over Carman's Lake £25, and general repairs to Road £155. Making a total of £600.

No. 12.

From Newcastle to Fredericton.

102 Miles.

This Road is in many places out of repair, the Bridges and culverts are numerous, and many of them having been originally built with barked hemlock, have very little durability, and are generally decayed and dangerous. In many places wood of a good description cannot easily be obtained, and the amount of work to be done has hitherto so far exceeded the means that were at hand, that repairs have been made in a temporary and inefficient manner. The Bridge across the North West Miramichi, built by a company as a Toll-Bridge, has been bought and thrown open to the public, particulars of the construction and cost of which are mentioned afterwards. During the past season this Road has required constant attention, some great improvements have been introduced, and the travelling is now safe, but it is not equal to the other great Roads out of Fredericton, and it will be some time before the expenditure for rebuilding Bridges and repairing the Road can be reduced to the ordinary amount. Two new Bridges have been built, and a third is now under construction. During the next year there will be required three new Bridges, all of them small, and a devia-

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tion to avoid a fourth; four Bridges require reflooring, and near the Nashwaak the Road is narrow, and subject to landslides. The estimate for all purposes being £950. The great trouble on this Road is now the material of the bridging, and it is a matter of great consequence to have good timber procured in the winter. There are thirty Bridges altogether on the line, of which four belong to the largest class, and have cost, collectively, over £9,000, and all but five have hemlock abutments, generally summer cut. These Bridges have cost nearly £13,000, and as their durability is not averaging 15 years, the cost of rebuilding Bridges alone, will amount to £900 per annum, without a more substantial class of erections can gradually be introduced. It is further observable that the average price of the whole Bridges on this Road exceeds £2 per running foot, which is four times the cost of the durable cedar Bridges on the Metis Road, and double the cost of the stone abutments on other Roads near Fredericton. Besides the thirty large Bridges, there are fifteen smaller ones under £25 value, all of hemlock. There is one Bridge with stone abutments and a long span, over Indiantown Brook, but the truss was not well connected with the stone work, and has settled about two feet on one side. The expenditure on this Road the last year has been £850.

No. 13.

From Fredericton to Saint John.

66 Miles.

This line of Road is generally in good travelling condition. Some of the Bridges are very substantial work, with stone abutments, and cedar or hachmatac superstructure; but many are equally indifferent, of spruce or hemlock. The Road was opened through in 1826, and some of the original Bridges and Culverts of that age yet remain between Saint John and Government House. Of these, some built of cedar still stand good; and as shewing the durability of this timber, the stringers in the old South Bay Bridge, excepting two, were all of cedar, and perfectly sound after 30 years in use, whilst

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of the other two of white pine and very much larger scantling, one was completely decayed, and the other had long been broken in two in the middle. During the last year the Grant has been mainly expended in small repairs along the Road, no new Bridges having been built by the Supervisors. Next season new Bridges are wanting over the Brizzly Stream, Queen's Brook, and at the mouth of the Nerepis, at an expense of £350. The repairs of the Road, including a number of small culverts between Saint John and Government House, the skirting of a portion of the north end, and protecting the Road in places from the freshets by stone work, is estimated at £400, making the total requirement for the Road Service next year £750.

The Bridge across the South Bay, near St. John, has been completed during the year by the Board of Works, and thrown open to the public, the particulars of which are given in a subsequent Report; and the reconstruction of the Oromocto Bridge having been determined upon, a contract has been let for the quantity of timber required, to be delivered by the 16th of next May.

No. 14.

Fredericton to Woodstock.

63 Miles.

This Road, running parallel to the St. John River and close to the west bank, is generally rough and hilly, and is intersected by numerous ravines and water-courses running into the St. John, and though the quantity of water passing down these rivulets is not very considerable, yet they require substantial work to resist the occasional ice-jams and freshets, and frequently lofty and expensive abutments. On the whole line there are fifty two Bridges that have cost over £25 each, twenty one varying from £5 to £25 each, and an immense number of culverts and cross-water drains besides. Of the larger Bridges, exclusive of Sullivan's Creek now building by the Board of Works, one is altogether of stone, twenty one have stone abutments with wooden or earthen superstructure, and three of

them are laid out for a double track. Of those having stone abutments, sixteen, built during the last three years, have a covering of cedar poles laid longitudinally over the walls, and close together, then brushed and covered with gravel. For all spans under 12 feet these Bridges may be expected to last 50 years, and are perhaps the best description for small streams, wherever the materials can be procured, throughout the Province. The use of gravel saves the great expense of frequent replanking, besides being more safe and agreeable for travellers; and as there is no limit to the breadth excepting convenience, in many places they can be made wide enough to save handrailing, or to accommodate the angular direction of the Road over streams without diverting the course of either. During the last year, four of these stone and cedar Bridges have been erected at a cost of £150. £40 has been expended in the repairs of Bridges, and the balance of the Grant, on the Road generally.

For the next season the Bridges over Garden's Creek, Long's Creek, and Meductic Brook ought to be rebuilt, and there are four others in a very bad condition. The estimate for the seven is £1,050, for the three immediately required £640, and for the repairs on the Road generally £340, making together £980.

In the course of two or three years, the cost of new Bridges on this Road will cease to be any great annual requirement. The large Bridge at Eel River will last probably forty years. Sullivan's Creek will be permanent work, and when the Bridges now reported upon are finished, in the same style as the late work, only three Bridges will remain out of the whole fifty two, that will cost more than £100 each to rebuild, to require renewal for 10 or 12 years. There are, however, some bad places on the Road to improve, and some of the approaches to the Bridges and steep hills are dangerous and inconvenient. The line is generally in a good state of repair, is very much travelled, and is probably one of the most important through communications in the Province.

No. 15.

Woodstock to the River DeChute.

40 Miles.

This Road is naturally rough and hilly, crossing a succession of deep ravines and abrupt elevations, requiring heavy and frequent curvature to obtain a tolerable gradient. It is at present in very good condition, but the soft nature of much of the ground, and the position of the Road in many places immediately on the banks of the River Saint John, render it liable to be washed and channelled in the Spring, and involves annually considerable expense in repairs.

During the season one new Bridge has been erected, and a deviation has been completed, about 3 miles north of Woodstock, to avoid another Bridge and reduce two bad hills, besides one or two minor alterations for the same purpose.

Next year a new Bridge will be required at Rideout's, some extensive repairs to the Little Presqu'ile Bridge, and two or three culverts, the estimate for the whole being £100.

No. 16.

River DeChute to Grand Falls.

33 Miles.

This Road is a continuation of the last, has the same general characteristics, and is now in thorough repair. During the season the principal expenditure has been upon the Bridges, two of which have been rebuilt, and others repaired. One of the new ones is over Wark's Millstream, is 160 feet long and 35 feet high, with cedar abutments; and crosses the ravine by one span of 60 feet. This is in place of a hemlock Bridge, with one block in the middle of the stream, and the interval to the roadway on either side supported by 5 bents also of hemlock. The old Bridge was 140 feet long, cost £90, and had been in use 14 years; the new one, 20 feet longer and 8 feet higher, has cost, well finished and painted, £148.

No new Bridges will be required on this Road next year, and £200 will probably be sufficient for all purposes.

No. 17.

Grand Falls to Canada Line.

50 Miles.

This Road is altogether out of condition, the Bridges are most of them the original structures, built in 1839 and 1840, and seem all failing together; the Road materials are bad, and the soft muddy bottom requires a deal of bushing and gravelling before it can be considered in a proper state. Of the twenty five large Bridges only five are less than 10 years old, and fourteen have been built more than 15 years, so that for the next few years this Road will require a heavy expenditure to keep it simply passable.

During the last season the only new Bridge to report, is the one across the Madawaska at the Little Falls, which is not at present quite finished, but the expense of which will be defrayed out of the balance of last year's Appropriation, now in the hands of the Supervisor. Next year three new Bridges will be required, a part of the one over the Quisibis will be to rebuild, and four others need more or less repairing, the estimate for all of which is £650. Besides this the Road requires some thorough work, for which £200 will be necessary to keep it in a passable state.

No. 18.

Little Falls to St. Francis.

32 Miles.

This is a new Road, still very incomplete, and would require a large sum to make it equal to the other Great Roads. During the season two new Bridges have been built, and a portion of new Road at the lower end has been completed; the upper end has not yet been much used, and the last 4 miles to the St. Francis still remains to open. The exploration of this portion was made last summer, and it is estimated to cost £350 to make it passable for traffic.

For the next season a new Bridge is wanted to supersede a very dangerous ford, and a portion of Road to connect it with

the present line. This is estimated to cost £175 with the Bridge, and the repairs of the Road from thence downwards will be £75, making a total of £250 altogether.

No. 19.

Grand Falls to American Boundary.

3 Miles.

During the season a new Bridge and about a quarter of a mile of new Road have been built near the Line. The Bridge is across the Deep Gully, and was very much needed, is of very good materials, and will be durable. The other Bridges and the Road are in tolerable condition.

No. 20.

Pickard's Store to American Boundary.

5 Miles.

This line has no important Bridges, but is still very incomplete, and inferior to the Road at either end of it. It would be necessary to spend a considerable sum upon it, and make some heavy alterations, before it could be considered as finished. To keep it as it is will require a small sum annually, and perhaps for next year £100 between this and the previous Road may be found sufficient for all purposes.

No. 21.

Buttermilk Creek to American Line.

9½ Miles.

There are no important Bridges on this line, and its original location was very bad. During the season a very important alteration has been made near the Boundary, the Road turnpiked, and gravelled 9 inches thick, and this part of the line which was almost impassable, is now the best on the route. A second deviation to avoid some bad hills has been laid out, and the land damages paid, but nothing else has been done upon it. This deviation, and another near Buttermilk Creek, will require to be made before the Road can be satisfactorily established. It will require £100 to make these two alterations next season.

No. 22.

Woodstock to American Line.

11 Miles.

There is only one Bridge on this line of any consequence, which has been rebuilt this year with cedar logs, and covered with the earth taken from one of the approaches, the grade of which has been reduced. An extensive alteration commenced last season, has been completed this, obviating the necessity of reconstructing a Bridge that was very much decayed. The land damages on the deviation were heavy, and discharging these, and the cost of the new Road, absorbed the greater part of last year's Grant. During the last four years some great improvements have been made on this Road; 27 stone culverts have been put down, replacing others of temporary construction. The cost of these, the new deviation, the Bridges, and other improvements, have employed nearly all the annual Grants, and the repairs of the Road generally have been neglected to carry out these various alterations. This line, continuing the Great Military Road through the State of Maine, is the principal communication between that State and the River St. John, between the lumbering on the upper Rivers and the City of Bangor; and with an extremely heavy traffic, and but little repairs on the greater portion of the Road for three or four years, it is now out of condition. The estimate for next year is £150. There will be no Bridges to build for some time, and a moderate sum afterwards, should keep it in good order.

No. 23.

From Fredericton to Saint Andrews.

78 Miles.

Some of the Bridges on this line are old and worn out, and the one over the Magaguadavic fell last Summer, and is now being rebuilt; the Road besides is generally in very fair travelling condition, but is worn flat in places, and the drainage is imperfect.

During the season about 5 miles of Road between Clarke's and the Red Hill have been remodelled, turnpiked, skirted, and the ditches cleared out, and a new stone Bridge has been built over the Waweig. This Bridge has the abutments and shearwater of large split granite, and the superstructure of pine and cedar, and presents an excellent model wherever similar materials can be procured. The walls forming the abutments are 20 feet long, and the shearwater extends 24 feet additional on the upstream side. The bottom courses are laid with large stones running through the wall 6 feet wide; above the third course the wall is coursed off 2 feet at the back, and batters 1 inch to the foot high in front, and the pine stringers are bolted on to the top course. The clear span is 30 feet, and the total length, including abutments, is 80 feet. The whole cost, including 5 inch cedar flooring, stringers, and hand-railing, is only £76, or less than £1 per foot run, and below the average of similar wooden Bridges throughout the Province. This is the second Bridge of the same construction on this line of Road, and as granite exists throughout the whole of this district, and almost up to Eel River, 12 miles below Woodstock, the additional expense, with proper arrangements for winter haulage, would be very little, if any, over timber for the abutments. Next year one new Bridge will be required over Trout Brook, heavy repairs to the Digdeguash and Johnson's Cove Bridges, and two others in the County of York must be re-covered. The new Bridge across the Magaguadavic will be finished before April, at a cost of £125. Exclusive of this, the estimate for next year is for the new Bridge £55, repairs to others £110, and to Road generally £135. Total £300.

No. 24.

Waweig to Saint Stephens.

9 Miles.

This Road is now in very good condition, and the Bridges are of excellent workmanship and durable materials. Some very heavy repairs have been put upon them during the season,

and the long Bridge across the Waweig has been entirely rebuilt above high-water mark. This work has been executed in a very substantial manner, and one abutment is of large sized split granite, the whole cost having been £336. Two other Bridges have been repaired at considerable expense, one almost amounting to a renewal, and the other two on the Road have stone abutments and cedar covering. The cost of keeping the Bridges in repair will therefore not be very heavy for some years, and the estimate for next year's operations is only £75.

No. 25.

Roix to Oak Bay.

16 Miles.

The Grant last year has been entirely expended in repairs upon the Road, the only Bridge on the line, across the Digdegwash, being in good order. This is not an expensive Road to keep up, and a Grant of £75 per annum will be sufficient for the purpose for the next year or two.

No. 26.

Oak Bay to Ed River.

60 Miles.

Beginning at the St. Andrews end, 10 miles of this Road is in very good order, to Smith's Mills; 8 miles more are turnpiked, but are in bad condition, and the remaining 12 miles to the Little Digdegwash are but little better than a winter Road; the swamps are bridged, and the whole distance grubbed and levelled, a small portion is turnpiked, but it would require £700 to make the last 20 miles equal to the first 10. From the Little Digdegwash to near Howard Settlement, for 15 miles the Road crosses a granite ledge, and the expenditure on this portion, though very heavy, has scarcely as yet made it passable as a winter Road. 400 rods of this portion were let last summer to be levelled 18 feet wide, which cost, including Commission, £184 13 4, and took nearly all the Grant for the upper end of the Road. This is at the rate of £150

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per mile, and the estimate for the 15 miles is put down at £2000. From near Howard Settlement to Eel River 15 miles, the Road is in a very good condition, and answers all present requirements. The Bridges on the line, of which there are 6, are all in good order, the principal one across the Digdegnash having been rebuilt during the season, taking about half the total Grant for the lower end, the balance being expended in repairs near Saint Stephens.

In making out the estimate for the next year, the 15 miles at the north end, and 18 miles at the south, can be kept in as good repair as necessary for £100, and the Bridges in the intermediate distance will require no outlay for a year or two. With respect to the remaining portion, a moderate sum might improve the 12 miles to the Digdegnash to make it a passable Road; but the other part, north of this, requires too heavy an outlay to be treated with advantage on the present system, and it is a question whether the whole amount should be expended at once, or whether this middle portion should be permitted to remain as it is, till some further action upon it becomes necessary. The former course would materially assist the operation of the Railway works now in progress through this district; under the present system the Grants are mainly expended in the perishable works, and small patches along the line, and though they have averaged for 11 years, the same sum as granted last season, £470, it is doubtful whether one half the new work is really completed.

No. 27.

Dead Water Brook to Saint Stephens.

17 Miles.

The western portion of this Road is very much travelled, leading from a thickly settled agricultural district to St. Stephens, Calais and Baring, and were the eastern part opened through, this would be the main route from Fredericton to the State of Maine. From St. Stephens to the intersection of the Woodstock Road is in pretty fair order; from the Woodstock Road to the Fredericton Road is scarcely touched, and to

complete this portion requires the making of three miles of new Road, and the building of a Bridge across the main Digdeguash. The whole expense of opening this line would be under £1000, and its completion would open up a good country, and form a valuable through line of communication. The expenditure the last year has been confined to improvements in the Road between the Woodstock line (No. 26) and St. Stephens. Next year a new Bridge is required across Dana's Stream, which is now in a very decayed state, and which will probably cost £250. The repairs of the Road besides, excepting new work, will not be heavy, and an allowance of £3 0 will cover everything.

No. 28.

Lower Trout Brook to Magaguadavic.

38 Miles.

This is another unfinished Road, intended to form a branch from the Fredericton and St. Andrews Road to the Town of St. George, passing for the greater part of its length down the Valley of the Magaguadavic, through a fine agricultural district which is settling very rapidly. Though some time on the Great Road system, but little has been done except by statute labour to the greater portion of it, the only part that is thoroughly complete being from the Town of Magaguadavic to the Second Falls, on an old Road that has been travelled for fifty years. This section of nine miles is now in very good condition, the Grants for the two last years having been principally used in rebuilding two Bridges, and repairing up the Road between these points. From the Second Falls to the intersection with the other Road at Lower Trout Brook, the whole distance has been cut out, and some portion is passable for wagons, the statute labour annually applied, improving the communication every year. The works generally are not difficult, and no important Bridges are required on this unfinished portion. In making out an estimate for next season, the same remarks apply to this, and to the two preceding Roads. When necessary to open them up, and make them

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equal to continuous through traffic, a special and sufficient Grant should be made to do this in one or two seasons at most ; till this is necessary the local wants of the settlements are easily relieved, if one end of the communication is maintained in good condition, whilst statute labour keeps open the Road to each new settlement as it is formed. The present system is partial and extravagant, fails to do the work thoroughly, or render what is done a public benefit ; holds out no stimulus to local exertion, and interferes with the application of statute labour. The amount necessary for this Road next year is £100, exclusive of any appropriation deemed advisable on the unopened portion.

No. 29.

Salisbury to Harvey.

44 Miles.

A liberal sum has been expended over the small Bridges, culverts, and roadwork generally on this line for the past season, and the whole distance is now in very fair travelling condition. A new Bridge has been built over Turtle Creek, of a durable description, the abutments and stringers being of pitch pine, at a cost of £49. Many of the small Bridges might be built in this district with stone abutments, without any marked increase in expense. Improvements are needed by cutting down hills, and filling up the ravines and hollows, and in some places where the Road passes over marsh, a heavy coating of gravel is necessary to make a firm bed, and £50 is asked the next year to be applied to this purpose. One new Bridge is requisite, and repairs to three others. This with the gravelling and ordinary repairs is estimated to require £300 for next season.

No. 30.

Isaac Derry's to Point Wolf.

25 Miles.

The eastern section of this Road from F. Styles' to Bray's, near Cape Enrage, is now in a tolerably passable condition,

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but being over a clay bottom, and as yet ungravelled, it will require constant attention to keep it in proper repair. Good ballast is not easily obtainable, but much expense would be obviated if such as can be procured were spread over the worst places. The western section especially, from Salmon River to Point Wolf, about half the total distance, is very bad, never having had sufficient expenditure upon it to make it suitable for a carriage. This part is rocky and hilly, but if once thoroughly turnpiked would be durable and easily kept in repair. There has been one new Bridge built this season, over Anderson's Hollow; no further outlay will be necessary for some time, either for new Bridges or heavy Bridge repairs, so that unless they are injured by accident, the whole of next year's expenditure will be made available for the Road improvements which are very much wanted. The estimate for this purpose is £200.

No. 31.

Saint John to Crooked Creek, County Albert.

73 Miles.

This Road was originally laid out for the settlement of immigrants, and its location to secure the most favorable alignment was less an object than the means of opening up a new country for cultivation, leaving all improvements or alterations to be made when the advanced state of the District should render thorough and easy communication a matter of more importance. Up to the present time the expenditure has been confined principally to the erection of Bridges, and the opening up of the route for carriages, but little surplus remaining for any improvements not strictly necessary for this latter object. The greater part of the distance is therefore still very unfinished, many miles have never been turnpiked or made passably smooth, and before the Road can be at all equal to the travel likely to come upon it, a greater portion will have to be remodelled, long deviations made to avoid the hills, and extensive improvements and alterations in almost every portion. The establishment of a Mail on this

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route between Saint John and Albert, requires these repairs to be attended to at once, and as all the Bridges but one are now in a tolerable state, nearly all the expenditure for the next two or three years can be made to tell upon the improvements of the Road. The amount required to complete this to a fair travelling condition will be from £3,500 to £4,000, and without this sum is applied in a more systematic manner than has heretofore been the case, a great portion of it will be wasted and consumed on portions of the line that will subsequently be abandoned, and in the removal of rocks, excavation of hills, and filling up of swamps, that a simple deviation might altogether avoid. The Chief Commissioner would therefore suggest, with this, and other unfinished Roads similarly situated, that before any portion of this outlay is incurred, a thorough examination and careful resurvey of the whole Road should be made, the deviations staked out, and separately estimated, and that none but the most urgent repairs should be put upon any portion likely to be superseded or affected by them; reserving for your Excellency's decision what portions and how much of the new Road should annually be undertaken. By this means much useless outlay will be saved, and the line brought much sooner and more economically into an efficient and satisfactory condition. During the past year a new Bridge has been built over Beard's Brook, at a total expense, including land damages, of £208, and a piece of new Road has been opened and turnpiked round the Four Mile Hills (so called) in Saint John County. Between Wallace's and M^cManus', 6 miles, near the King's County Line, the Road was only opened 10 or 12 feet wide; this portion has been widened and turnpiked, and in Albert County, the expenditure has been laid out entirely upon the Road, though it is as yet scarcely passable for a carriage. Next season a new Bridge will be required across Crooked Creek, to supersede a pile Bridge, which, though only ten years old, is in a very precarious state, and will probably be destroyed by the next spring freshet. The estimate includes £300 for this purpose, and £300 for the use of the Road, besides any sum that it

may be desirable to expend upon its permanent reconstruction after the surveys have been made, and the alterations determined upon.

No. 32.

Saint John to Quaco.

30 Miles.

Last summer the Botsford Mill Road, commencing at the Forks near the Aboideau, at the City line, and meeting the old Road at Bartrim's, was for the first time included as part of this, having been adopted by the late Chief Commissioner as a portion of the Great Road between Saint John and Quaco. About £100 has been expended upon it, and as it is in very bad condition it will require £250 to put it into good order.

The wharved Road round Vaughan's Creek Head in Quaco, has been extended this year at an expense of £28, and it will require £100 more to complete it. It is twelve feet high, on the side next the Bay, and 28 rods long, built up solid with wood against the water, brushed and filled with stone. A Bridge has been also built over Garden's Creek at a cost of £25, and other improvements made at a cost of £100, the Road being now in a very fair state of repair. The estimate for next year, exclusive of the Botsford Mill Road, includes the completion of Vaughan's Creek, repairs to two small Bridges, and general outlay on the Road, altogether amounting to £250.

No. 33.

Hampton to Bellisle.

8 Miles.

This Road has no Bridges upon it of any size, is in general good order, and the annual Grant of £25 is sufficient to maintain it in the same condition.

No. 34.

Scribner's to the Head of Bellisle.

25 Miles.

There is only one Bridge on this line, which with the Road generally, is in very good repair; £50 will be sufficient for all purposes next season.

No. 35.

Nerepis to Gagetown.

23 Miles.

The whole of last year's Grant having been expended in repairing the Road, it is now in very fair condition, but the Bridges are not in good order, and next season the one over Queen's Brook must be rebuilt. The present one was reported unsound before, and is now quite decayed. It will cost £125; the foundation is bad, and the approaches expensive, the ground being a soft intervale, and the River altering its channel continually. Total requirements, with the Bridge, £175.

No. 36.

Fredericton to Jemseg.

30 Miles.

This Road is subject annually to overflow from the spring freshet, which occasionally inflicts serious damage. Last season this past off very quietly, and the outlay accordingly in repairs has been small. One old Bridge has been improved, and the rest of the Road is in as good condition as from the nature of the ground can be expected. The requirements for the next year depends entirely upon the amount of injury occasioned by the freshet, but if no more mischief occurs than the last season, £100 will be sufficient for all purposes. The Easty Creek, at present crossed by a floating Bridge, has been the subject of a Report by Mr. Wilkinson to the Board of Works, who after carefully examining the place, recommends a permanent water-tight dam, of sufficient width and solidity for the support of the roadway and to resist the action of the freshets. The estimate for such a work, made entirely of large timber, is £850, if masonry is preferred, £2,500.

No. 37.

Jemseg to the Finger Board.

29 Miles.

This Road is now in very good repair, the expenditure last year having been applied judiciously. During the season one

new Bridge has been built over Foster's Mill Stream, and upwards of 40 new culverts put down. These are all alike, built with hemlock mud-sill below the water, and tamarack or pine above. These are crossed by tamarack stringers, let in 2 inches on to the walls to keep them apart, and crossed with poles of the same material, sided and hewed, and the Road on either side levelled off to the same height. These culverts cost from 10s. to 12s. 6d. each, will probably last 25 years, and in a district where no stone can be obtained, are undoubtedly the best substitute. The old culverts consisted generally of 4 logs thrown together, were always unsafe for horses feet, and their average durability might be 4 or 5 years. The Bridge built over Bellisle in 1855, has three spans of 40 feet, and one 36 feet long. They are unsupported by any description of truss, and are altogether too long, weak, and vibratory. The stringers are laid upon their corners, and the piers are built in the form of a diamond up and down stream. The material is principally hemlock, and the Bridge altogether of doubtful stability. One small Bridge over a Mill Stream will be necessary next season, and a portion of the Road requires skirting, the estimate for all purposes being £150.

No. 38.

Cole's Island to Cape Tormentine.

40 Miles.

This Road has not been many years on the Great Road establishment, and was at that time in a very imperfect condition. Since then the annual appropriations have not been sufficient to overtake the repairs, and the foundation is generally so soft and marshy that, without thorough Macadamizing, the thaws will damage it every spring. There are a number of small Bridges on the line, costing from £5 to £15 each, which are old and decayed, and the renewal of these will be the principal requirement of another season, as it has been of the last. To put the Road in thorough repair would involve a heavy outlay, and before this is attempted the line should be resurveyed, as recommended before; for present purposes £100 is sufficient.

No. 39.

Fredericton to Kent County Line.

56 Miles.

This is a new Road, scarcely as yet passable all the way for wagons; the land is generally very good, and well settled; the travelling increases every year, and when completed, this Road will be a great boon to the district through which it passes. From Fredericton to Queen's County Line the Road in many places has a hard rocky foundation, and in its original construction large stones were left undisturbed, and endangered the travelling. During the summer a party was collected, and the whole of these have been removed; and the Road, though not yet turnpiked all the distance, is in a very passable state. The Bridges are in good condition, and one new one across Burpee's Mill Stream has been built, and completes the communication so far. From Sunbury County, through Queen's, to Kent County Line, the Road is not yet in such a forward state; but no Bridges having been required last season, the whole of the Grant has been expended in improving and completing the thoroughfare, and has opened it for several miles, where before it was impassable for wagon traffic. There still remain 9 miles to turnpike and two small Bridges to build, to render this portion of the route thoroughly available, which it is estimated will require £300 to complete. The total requirement for next year, to put this line in a position equal to the value of the district through which it runs, to complete the cross-water drains, and turnpike the whole distance, is £450. When open through to Richibucto, this will be one of the most important through communications in the Province, connecting the Gulf Shore with the Valley of the Saint John, and intersecting the country about equi-distant between the Fredericton and Miramichi Road, and the Saint John and Shediac line. Opening up a country but little inferior in agricultural value to the latter, and better than the former, it crosses in its course no large Rivers like the others, requiring heavy expenditure to make and maintain a thoroughfare, and is less liable to accident from Freshets, or interruption from the destruction of its Bridges or Roadway.

No. 40.

Kent County Line to Richibucto.

44 Miles.

This Road, an extension of the last, and completing the line from Fredericton to Richibucto, is, it is understood, in a very imperfect condition, but from the late date that this Commission has been formed, no opportunity has offered of any member of the Board personally examining the route, and the Supervisor has not deemed it a part of his duty to reply to the communications addressed to him from this office, or to make the usual annual Report of the state and prospects of the Road. From the accounts transmitted to the Auditor it would appear that £510 has been expended this year, which at £12 per mile ought to have produced a marked improvement on a Road only 44 miles long, with no important Bridges, and no unusual difficulties to contend with along its entire length.

These two Roads Nos. 39 and 40, which in reality form only one line from Fredericton to the Gulf Shore, were for some years under the supervision of John A. Beckwith, Esquire, under whom the line was nearly completed from end to end, and who reported in 1853—"In October last I was enabled to travel in a wagon from Fredericton to the Gasperau, (about half way.) From the Gasperau to Pine's on the Richibucto, (about 30 miles) on horseback, and in a wagon from Pine's to the Town of Richibucto." Since Mr. Beckwith left the Road, it has been generally under two, and last year under three Supervisors; and Mr. Sowerby, the Supervisor of the Kent County division of the line, in 1855 reports that "the dishonest way in which contracts for turnpiking have been performed would appear to suggest the necessity of dividing any future Grant made for the Kent portion of the Road, and appointing two Supervisors, (making four on the whole line) one at the Salmon River side of the County, and one at Richibucto, the present state of the Road rendering it impossible for one at either end to give it that necessary supervision that it requires." The expenditure during the last five years has been under five different Supervisors, the Grants have been £4,750, or nearly

£10 per mile per annum, and the Road is evidently in very much worse condition than it was five years ago, the whole forming a very melancholy prospect of completing the communication under this "divided command." Mr. Sowerby's being the last information that has been afforded as to the state and requirements of the Road, it is really impossible to form an estimate for the ensuing year, and as the expenditure on this line has hitherto far exceeded the average of the rest of the Province, and the Road apparently becoming worse under its present management, it remains for your Excellency to determine the best course to be pursued.

No. 41.

Tilley's Landing to Little River Mills.

12 Miles.

This Road, with the exception of two miles of intervalle, is in a very satisfactory and efficient condition. Two Bridges have been repaired this season, and will last for two or three years longer, the rest are in a good condition. A portion of the last Grant has been applied to repairing the Wharf at Tilley's Landing, at the Saint John River end of the Road, which is described afterwards. For next year a portion of the intervalle ought to be turnpiked and gravelled, and the estimate for ordinary repairs, and to do this gravelling, would be £150.

No. 42.

Sussex Vale to Upham.

12 Miles.

The expenditure the last season has been entirely on the repairs of the Road, which is now in a very fair state. Next year a new Bridge will require building over Jeffries' Mill Stream; and a rampart or embankment is wanted to raise the bank of the Stone Quarry Brook, and prevent it flooding the Road, which it does nearly every year. The estimate for this embankment and for the Bridge at Jeffries', is £75, and the total requirement for the Road for next year, including

these, will be £150. There is a deviation in Sussex Vale that it would be desirable to make, to avoid a very bad hill, the expense of this when it is undertaken will be about £50. It is not recommended for next season, unless the sum above mentioned should be found sufficient for all purposes.

The preceding Roads therefore will require for the year 1857, the erection of 35 new Bridges from £25 to £350 each, at an estimated expense, including repairs to 12 others, of £5,705. The ordinary repairs to the Roads and Bridges is estimated to amount to £8,395, making the total amount required for the Great Road service for 1857, £14,100. The details of this amount are collected in Appendix B, and referred to in the preceding Road Reports. Exclusive of the Bridges included as above, the large structures over the Tantamar, the Tabusintac, Caraquette, Eel River (in Restigouche County), and Easty Creek, amounting to £5,400, will probably be required; and the Magaguadavic, Sullivan's Creek, Oromocto, and Hampton Ferry, now in hand, will require £3,825 to finish, making £9,225 for large Bridges, exclusive of Road service. Some of these may not be built or finished this year, and others not known or expected to fail at present, may be required almost immediately. The estimates for the Dredging Machine, for the Improvements of the Rivers and Harbours, for the Light House on Grindstone Island, and for the Public Buildings and Wharves, as well as for opening up new Roads or completing some of the old ones, is left to your Excellency's decision, as involving questions not within the control of the Board of Works.

BRIDGES BUILT BY THE BOARD OF WORKS.

No. 1.

Sullivan's Creek.

The Contract let last year to Mr. Pattinson for the erection of this Bridge having been given up by him, it was relet after some delay to Mr. Tomlinson on the 1st of October, for £3,000

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and the old plant. There were then about 50 yards of masonry in the culvert, and nearly 43,000 yards of excavation to do, some change in the original design, which rather increased the quantity, being deemed necessary. Mr. Tomlinson commenced work on the 10th of October, and up to the 11th December, there had been 11,500 cubic yards of excavation removed, and about half the required quantity of masonry was complete. The southern approach is finished, except dressing off, and the Contractor's main force has been since directed to the removal of the heavy bank on the north side. From the nature of the work, the force of men cannot be increased beyond a certain number, but there were at that date 65 men employed, and the excavation was progressing at the rate of 300 yards per day. A ledge of rock containing about 200 cubic yards has been cut through, and the material has since been a hard gravel in the bottom, becoming fine and less compact as it approaches the surface. It will take some time for an immense bank like this to consolidate sufficiently to put on the permanent handrailing, but it will be finished sufficiently to let the travel across it by the end of next May. The time of the year is however unfavorable for earthwork, and operates heavily against the Contractor. The total length of the improvement is 1,786 feet, the greatest depth of cutting is 41 feet on the north approach, and the maximum height of embankment over the centre of the culvert is 64 feet. The total cost complete will be £5,500, including payments to all parties.

No. 2.

Missiquash Bridge.

At the date of last Report, this Bridge was nearly finished, and on the 16th of September 1856, it was examined and reported upon by Alex. Light, Esq., previous to acceptance by the Provinces:—"The masonry has been finished in extremely good style, and the work generally done according to contract. Southern pine has been substituted in the whole of the truss-work at an extra expense of £129 8s., and some other extras for iron, &c., increase the total cost of the Bridge to £983 8s." One half of which sum is due to this Province from the Government of Nova Scotia.

No. 3.

South Bay Bridge.

The arrangements and contract for this Bridge were made in 1855, to be finished by July 15, 1856. With trifling alterations it is a copy of the old one, and immediately parallel. It is 406 feet long, or including abutments and approaches 730 feet, containing 9 piers and 10 openings of 24 feet each. On the stringers are laid transversely cedar poles, brushed and covered with ballast. The specification has not been strictly adhered to in many respects, and some of the cedar logs in the piers and approaches were as first put in not quite sound. In 1854 Messrs. Light and Wilkinson made a Report and Estimate of the cost of this Bridge, amounting to £1,140; but the plan was subsequently altered from a pile Bridge, as recommended by them, to piers, as mentioned above. The alteration has not been an improvement, and the Bridge in its present state will not probably be so durable as the one it supersedes; its total cost will be about £950.

No. 4.

Hampton Ferry.

This Bridge was contracted to be finished by the 1st of November last, but from delay in getting the timber, and a variety of causes, has not progressed so rapidly as was expected. On the 21st of November last a serious accident occurred, still further delaying the completion of the Bridge, destroying the timber in one of the heavy framed chords, killing two of the workmen, and seriously injuring two others. This unfortunate affair will prevent the opening of the Bridge probably till next June or July, as new timber has to be procured at a time when it must of necessity be hauled a long distance. This it is understood has been procured, and will be brought on to the ground as soon as possible. Of the embanked approaches about 7000 yards remain to be finished, including the filling of the abutments, but as this can be finished before the woodwork, operations for the present have been stopped on the earthwork. The planking of the piers and lining the abutments is the only description of work at which the men are now employed.

No. 5.

Hammond River.

This Bridge was nearly finished at the date of the last Report, has since been completed, and reflects great credit both on the design and execution.

No. 6.

North West Miramichi.

This Bridge was constructed by a chartered Company on certain conditions of sale to the Province, should such a course be deemed advisable. During the season the transfer has been effected, and the Bridge thrown open to the public free.

The total length is 1,360 feet, containing 9 bays of 80 feet span, and 1 of 30 in which it is proposed to have "a draw" when such is necessary. The abutments extend 170 feet from the north shore, and 280 feet from the south, consisting principally of large sized cedar, floored, ballasted, and gravelled over. The piers, which are mostly in from 24 to 26 feet water, are 30 x 60 at the base, and 20 x 40 at the top; in each pier are two floors, loaded altogether with about 50 tons of stone ballast, and well secured. The truss is supported by double Queen posts, and the floor is of 5 inch hewn timber. The total cost of the whole structure has been nearly £5000.

No. 7.

Musquash.

This Bridge was originally destroyed by the freshet of 1854, which also carried away or damaged five other Bridges on this line of Road, between Saint John and Saint Andrews. The old materials of the Musquash Bridge were collected, and a temporary Bridge was built, which answered till the last spring, when the whole was lifted by the ice from its foundations, and at ebb tide settled down bodily. On the 20th of March, Mr. Tomlinson examined the place, selected a site for the new Bridge, and undertook to build one for £750, before the end of the season. This has been done, and the Bridge opened to the public. It consists mainly of three

openings, the central space being a draw of 40 feet span, with a bay on each side of 30 feet. The abutments and piers are necessarily very high, this being a tidal river, and as the draw is seldom used excepting at high water, the tail of the draw-bridge, which answers for a balance weight, requires to be kept clear of the rising tide. The earthen approaches were, from their height, expensive, and are included in the contract, and with preliminary expenses and temporary arrangements for the traffic, the whole expense of the new Bridge has been about £800.

No. 8.

Oromocto Bridge.

On the 1st of November, 1856, an examination was made of the Bridge across the Oromocto, which was found to be in a very dilapidated condition, and plans and estimates have been made for a new one. The River is 233 feet wide, with an average depth of 20 feet at low water, and the approaches, especially on the north side, are long and expensive. The plan for the new Bridge comprises a draw in the middle of the stream, opening 45 feet, and four bays on each side of 30 feet each, making altogether nine openings, and a total length of Bridge of 285 feet. The approaches will be solid embankments, riprapped with stone to prevent washing, and the general arrangement of the piles, truss-work, and draw, are similar to the Trout Creek and Musquash Bridges. On the 29th of December a contract for the whole of the timber, piles, and planking necessary for the structure, was let for £435, to be delivered at the site of the present Bridge before the 16th of May 1857.

These comprise all the Bridges on which there has been this year any expenditure by the Board of Works, the accounts of which have been kept distinct from the Great Road Appropriations. Other Bridges built out of those Grants, will be found, with their cost and principal dimensions, in the description of the Roads, and in Appendix D.

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ing upwards of £25 each, is 470, others costing probably more than this sum are not included, as the particulars of their construction, price, age, and so forth, are not known, and others have been built by statute labour, of which no account has been taken. The 470 Bridges have cost, as nearly as can now be ascertained, £126,760, this amount being generally clear of all expenses for the approaches, preliminary charges, or management, and often of special appropriations, incidental assistance, and statute labour. Adding 20 per cent. for supervision and extras, the total cost of the Bridges now in use has been little, if any, under £150,000, or an average of about £300 each. 180 of these Bridges costing, with supervision, about £12,000, are now upwards of 10 years old, of perishable material, and shewing more or less signs of decay, and as many of these are temporary structures, and must be replaced by longer and more expensive ones, to rebuild these Bridges on the present system, and in the most economical manner, will require for the next 5 years over £8000 per annum. This is exclusive of Bridges under 10 years of age, but which already shew such manifest imperfections, as to make it doubtful how long they may survive, and it is exclusive also of the damage sustained by freshets, ice-jams, or other accidents, which judging by past experience would seem to cause about 25 per cent. of the total outlay. Adding therefore a moderate sum for these contingencies, and allowing for the decay of Bridges before the assumed period of 15 years, the expense of this portion of the Great Road Service will be at least £12,000 for the next 5 or 6 years. This sum, heavy as it undoubtedly is, is not more than the average of the last 10 years; four-fifths of those now standing having been built within that period.

The total length of Bridging, including the approaches, which are generally planked and handrailed, is about 112,000 feet, or over 21 miles, and dividing the original cost and annual expense of renewals by this number, the average cost of construction will have been £1 6 8 per foot run, and the charge for renewal 2s. 1d. per foot per annum, giving the present durability of the wooden Bridges throughout the Province an

average of little over 12½ years. The repairs to these Bridges are generally confined to the superstructure or planking, their rapid decay seldom requiring or receiving any attention to the abutments or underworks; and if the annual expense of renewals seem extravagant, the cost of repairs and replanking on Bridges whose average life is so short, must seem equally unreasonable. Over 70,000 feet running are covered with lemlock or spruce planking 3 or 4 inches thick, and costing on an average, secured in its place, about 5s. per foot in length of the Bridge. This flooring will last about 6 years, often not over 5, and requires renewing generally twice, and always once in the short life time of the Bridge, costing £1,700 annually to keep up under 14 miles of flooring, exclusive of its total renovation every 12 or 13 years. If to this is added the cost of handrailing, new stringers, and other repairs, the total expense for maintenance amounts to about £2,700 per annum, or 5d. per foot on all the Bridges in the Province; making the actual average cost for repairs and renewals, over all the Roads, about £14,000 per annum, or 2s. 6d. per foot run.

Some of the Bridges built the last year or two, (exclusive of the new ones by the Board of Works,) have been of a superior style of workmanship, and on one or two of the Roads a system of durable and permanent work has been partially carried out, but these isolated attempts, reflecting great credit upon the individual Supervisors, scarcely affect the average throughout the Province, and show not so much any improvement in the character of the bridging generally, as what may be obtained when a system is introduced and worked to. Even in some of the best of these, there is an evident want of calculation and design, and some small saving, or ill-devised portion, detracts from the value of the whole, and perhaps injures its permanence and utility. Some of them are approached by descents so frightful, and round curves so sharp and dangerous, that the Bridge only answers half its intended purpose, and others, as the one over the Main South West Miramichi, have an expensive and durable superstructure placed on abutments so badly designed that the existence of the whole is endangered.

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A great variety of wooden Bridges have been built in one part of the Province or another, and much experience has been gained respecting their construction, cost and materials, but no system has been adopted by which these results have been perpetuated, or registered for future reference; and it is with the greatest difficulty that the past history of the Road and Bridge making can be traced. As far as regards the materials at hand, few parts of the world would appear to be much better situated; and with very slight addition to the present outlay, permanent abutments of granite, or durable ones of cedar, can generally be secured. With a view to reduce the cost of granite to the lowest possible figure, quarries might be opened in different parts of the Province, and contracts let for the quarrying and dressing the stone, ready for the contractors, who would be required to take it for their Bridge contracts at a certain price. This was the system adopted by the Grand Trunk Railway in their large stone bridges in Canada. The extra haulage to some places being more than made up by the saving in opening quarries for every individual structure, by the quality of the stone procured, and by the time saved in having the dimensioned blocks ready whenever required. The granite ridge that crosses the Province from Saint Stephens through the centre of the County of York, presents a most valuable building material, and the experience of the Waweig and Sullivan's Creek Bridges show that, without chisel dressing, large squared blocks can be procured of almost any dimensions. By having a supply of stone beforehand, letting contracts in the autumn and winter instead of the spring, so as to secure the benefit of haulage on the snow, it is believed that every Bridge in the Counties of York and Charlotte might be furnished with granite abutments for £1 10s. per cubic yard.

In other places where stone cannot be procured, autumn contracts would be equally advantageous to those seeking good winter-cut timber, the haulage be reduced, and the material of very much more durable character. Cedar abutments, and for short spans, cedar stringers, are next to stone the

most durable, and in many localities, from the nature of the ground in which cedar generally is found, this, unless when the ground is frozen, cannot be procured excepting in small and insufficient quantity. Culverts and earthen embankments, as at Sullivan's Creek, whenever practicable, should be employed. By winter haulage for all the materials requisite to make a commencement, and by having the stone ready at the opening of the spring, the average cost of these works will not exceed by fifty per cent. the present rate of tumble-down hemlock Bridges usually found across the ravines, particularly practicable for culverts. With respect to the additional cost of permanent work over temporary, Sullivan's Creek may be instanced, where the same improvement, but with a wooden Bridge, would have cost within £1,000 of the present structure. Deducting the expenditure on the improvement of 1450 feet of Road on the north side of the Bridge, the absolute cost of the embankment and culvert will have been under £4,000, whilst the old hemlock Bridge, without approaches, cost £2,000. It was built in 1841, and has been unsafe for two years. From ten to fifteen years is the life of all these large wooden Bridges, and to renew such a structure worth £2,000, requires the annual deposit of a sinking fund:—

To renew in 10 years, of 8 per cent., or £160			
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Taking fourteen years, which is beyond the average, a sinking fund of £100 per annum, with accruing compound interest, forms a first charge against a wooden Bridge to provide for its renewal. During that period, it will twice require replanking, if spruce, as at present, is employed, at a further cost of £200, which spread over fourteen years, requires £14 per annum for the flooring, and iron spikes, cramps, new stringers and handrailing, will bring this up to £20—making £120 for repairs and renewals, which is the interest on the additional £2,000 that the permanent embankment has cost. Besides these certain charges against the wooden Bridge, which brings up its expense to the full cost of stone, there is

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the risk of accident from fire, of its falling, or being carried away by freshets or ice-jams, the washing out of the underpinning, and subsequent settlement of the superstructure, the continual apprehension of some unseen agency or decay, and the liability to which all foundations in the neighbourhood of water are more or less liable, change in the channel, or undermining of the foundations, from any accidental or unforeseen diversion or impediment. To a country seeking settlement, any cause affecting the permanence and value of property is a matter of more importance than two or three per cent. in the amount of the outlay that secures it, and nothing is so injurious as the apprehension of some catastrophe that may interrupt the communication, or lead to a diversion of the thoroughfare. The permanent works of a country are its value in the eyes of the world, and temporary expedients, however numerous, give a fluctuating and temporary value, but no genuine advancement or intrinsic progression. Were rivers and railways deviated, removed or obliterated as easily as these half-established Roads and decaying Bridges, their value in increasing the prosperity of a district, would be as trifling as the latter, whilst the permanent and expensive Bridges that fix the locality of a thoroughfare, and keep open a communication in a certain unalterable channel, like the other avenues of commerce, retain some portion of the business and activity that they have given rise to, and impart a value and importance to their frontage, equal, if not superior, to the others.

With respect to the durability of stone work as affected by the climate, the oldest stone bridge in the Province, over Phyllis's Creek on the Road hence to Woodstock, built in 1810, was widened in 1838, when the old work was found perfectly good, and this year old and new seem equally substantial. Where stone cannot be procured, cedar, especially in winter, generally can, and the Bridges on the North Shore, and others alluded to in the description of the Roads, show how extremely cheap and efficient wooden Bridges may be made. The old growth of hacmatac is also extremely dura-

ble, and for planking the additional expense over spruce is nothing to the economical difference in value. With respect to planking, when such is necessary, the cost of hemlock and spruce is so nearly equal to pine and tamarack in many parts of the Province, that the former should be very sparingly employed. The use of four instead of three inch plank, as on some of the later Bridges, appears to be attended with but little advantage, the wood decaying before it is worn out. Nor does even the enclosing of the Bridges with a roof appear to be any great protection to the spruce flooring; the Renous River Bridge, floored with four inch spruce, and covered at the top, has been built under six years, and requires reflooring next spring. The cause of this rapid decay in this and other covered Bridges, may be principally due to the roof affording a refuge in summer for all the vagrant cattle of the district, who make this their shelter by day, and their bed at night, increasing the danger and difficulty of travelling through them, and keeping the floor in a perpetually dirty and offensive condition. As an improvement on spruce, the Ares-took Bridge built in 1848, and covered with four inch spruce, was sheathed with tamarack in 1855, which will probably last out the Bridge, the abutments of which are hemlock. The relative expense of re-covering this Bridge, 490 feet long, was estimated at £136 for spruce, and £148 for tamarack. One of the Bridges built between Saint John and Nova Scotia this year, over the Mill Stream, 42 miles from Saint John, has been planked with white pine. But few Bridges in this Province have been so covered, though in Canada its use for this purpose is almost universal. On the Road from here to Woodstock, Long's Creek and Dow's Creek Bridges were planked when first put down with three inch pine. The latter stood fifteen years, and the former of the same age is still in use, though the Bridge itself is very much decayed. The Digdeguash Bridge between here and Saint Andrews, built the year before Long's Creek, has had three coverings of hemlock plank, and if not rebuilt next year will require a fourth. Probably the best covering that has hitherto been

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employed is the simple flooring of round cedar poles, bushed and gravelled as on the North Shore Roads, and the only disadvantage attending it for long spans is the great weight of material, and consequent injurious strain thrown upon the abutments and stringers. This was undoubtedly the cause of the subsidence of the old South Bay Bridge, and is an objectionable feature in the new one at the same place. A lighter flooring of gravel and lime, of cement or asphalt, would be a great improvement, and if generally employed, its original cost would be no more than the present planking, be much more pleasant and safe for travellers, and save the Province probably £2,000 per annum in repairs.

For the stringers that cross the openings between the abutments, and on the strength and firmness of which the safety of the travelling depends, and for the truss work employed to carry these stringers when the span exceeds 25 or 30 feet, the best timber at present employed is probably white pine. The Missiguash, and a few Bridges in Westmorland and Albert, have been built of Southern pine, the expense of which would, however, prevent its general adoption throughout the Province. Of late years much attention has been bestowed upon wrought iron as a substitute for wood for this purpose, and in certain situations there is no doubt that light iron girders from 60 to 100 feet span, can be produced cheaper than any timber that would be admissible in the same situation. Independently of its durability and cheapness, the light lattice girder forms the most efficient handrail, and the details being always above the roadway, and in sight, no accident can occur without being at once detected. For a 70 foot span, a pair of wrought iron girders, capable of bearing 20 tons in the centre of the opening, or 40 tons equally distributed over the span, would weigh about three tons, and cost probably, complete, under £2 per running foot, which is about the same as the present Queen post truss with the usual white pine timber, and less than when pitch pine is employed. An additional advantage of these girders would be their strength, which would permit the employment of a concrete flooring without

any injurious or dangerous strain to affect the safety or durability of the structure.

The undersigned has already suggested to Your Excellency, a revision of the system of management under which the Great Road establishment has grown to its present magnitude ; and without wishing to detract at all from the merits of those who have previously been engaged in this work, has felt it a duty to point out some of the inconsistencies and failures that have been perpetrated, as shewing the necessity for a more economical and scientific arrangement. In advocating the employment of salaried officers, acting immediately under the orders of the Board of Works, it is believed that this is the only system by which much that is at present wasteful and extravagant can be prevented. A similar suggestion was offered to Your Excellency by the late Chief Commissioner in his Report for 1855 ; and as far back as 1840, in his opening Speech to both Houses, Sir John Harvey, the then Lieutenant Governor, expressed his opinion very strongly in favor of committing the "Great Roads" to the care of salaried officers "as the best mode that has occurred or been suggested to me, to insure uniformity in the system of their construction and repair, as well as economy in the outlay connected with this very important branch of the public expenditure."

The estimates for each separate Road, in the previous Report, are exhibited at one view in Appendix B, and are exclusive of the expenditure on such large Bridges, as since the appointment of this Board, have been excepted from the Great Road service of the Supervisors. Should no such appointments be made for the ensuing season, some one or two of the Roads may not require so much as this estimate, the amount being partly to guard against accidents that may not occur, and the correct and equitable apportionment of the Grants on many Roads being dependent upon unforeseen contingencies.

DREDGING MACHINE.

The Dredging Machine began to work on the Grand Lake Shoal on May 7th 1856, where the work had been suspended the year before, and up to the 7th of July excavated 25,380 cubic yards. At the end of the last season a channel had been cut 1,200 yards long, 35 feet broad, and 12 feet deep. This has been widened 25 feet, making now a total breadth of 60 feet for that distance, and in addition, the channel has been lengthened 600 yards by a breadth of 35 feet, further into the Lake; the whole distance of upwards of a mile through the Shoal being now passable for boats drawing 11 feet water. To complete this work, that part of the new channel cut this year should be widened to the same dimensions as the other, viz., 60 feet, and the whole cleared out to 12 feet deep. The material removed was yellow and blue clay, and there does not appear to be any great tendency to deposit mud or sawdust, and if the whole length is made uniform, so as to secure the scouring action of the outflow, what has been done would probably be permanent. During the year the boats have been enabled to pass and repass freely without interruption or discharging part of their cargo as heretofore.

The Dredge was subsequently removed to Fredericton to clear out the wharves and deposits near the shore, and took out 2,850 cubic yards principally of mud. Some extensive repairs were put upon the hull and machinery at this time, and on the 5th of August the boat was removed to the Oromocto Shoals, where it worked till the 1st of October, and again from the 24th of October to the 10th of November. During this period 33,070 cubic yards were excavated, cutting a channel 450 yards long, 80 feet wide, and 15 feet deep, across the principal bar. The Oromocto Shoals consists of a series of bars stretching across the River, and extending for about 2 miles down the Saint John, one half of which distance will require to be dredged. The material is a fine white sand admirably adapted for building purposes, deposited to a depth of from 5 to 7 feet, on a substratum of blue clay. As this sand will only stand at an angle of 1 to 5 under water, it would

seem to be desirable to excavate a channel through all the bars, say 200 feet wide, and 15 feet deep at low water, when in all probability, the River, instead of silting up, will rather have a tendency to scour the channel and keep it permanently open. The causes that originally formed these deposits in the Saint John being still in operation, and the material itself so light and unstable, any remedy short of a complete thoroughfare for the ebb-tide would seem useless and unsuitable. From the 1st to the 21st of October, the Dredge was employed at Fredericton in cutting a channel for the ferry boat across the River, and in this service removed 10,380 yards from a series of sand bars formed below the mouth of the Nashwaakisis, on the east side of the Saint John. The total number of cubic yards excavated during the season of 158 days, has been 71,680 yards; and the total expense up to the 25th of November, when the boat was laid up, will be about £1,300, or a trifle over 4d. per yard.

Included in the repairs of the Machine for this year, is about £150 expended in improvements and alterations, in raising the main shafting and changing the position of the bucket ways, to increase their capacity and improve their action. These alterations, removing the Dredge from place to place, breakages and delays, occupied 25 days, leaving the total number of working days 133, and an average of 539 cubic yards per day excavated.

Another heavy expense, amounting to nearly £100 for the season, has been the cost of towage, which for the future may probably be reduced. The purchase of a new Scow, amounting to £77, is also included; but as a set off against these extraordinary charges, the cost of wintering the machine, and repairing during that time, must be added to form a correct estimate of the expense; and taking into account the favorable nature of the work on which it has this year been altogether employed, and the present good condition of the hull and machinery, it must be regarded as below what may be expected as the average expenditure. For next season the estimate of £10 per day for 150 working days, or £1,500, is made under the suppo-

through all the low water, when going up, will rather keep it permanently these deposits in the material itself so complete thorough- and unsuitable. A dredge was employed on a ferry boat across 380 yards from a pier of the Nashwaaksis, a total number of cubic 18 days, 1 been the 25th of Novem- £1,300, or a trifle

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IMPROVEMENT RICHIBUCTO HARBOUR.

A Contract was let last year by the Chief Commissioner to Messrs. Holderness and M'Leod, to deepen the Bar at the Mouth of the Richibucto River to 13 feet at low water, the Contract specifying that no part of the sum should be paid till the whole was completed to the satisfaction of the Government. During the season, it is understood that considerable dredging has been done, and that the depth of water on the Bar has been improved, but no official notification has been made to the Board, and nothing has been paid on account of the work.

ERECTION OF LIGHT HOUSES.

No. 1.

Miscoe Island.

On the 25th of August 1855, a contract was taken by Mr. James Murray of Newcastle, to erect a Light House, Keeper's House and Wood Shed on Miscoe Island, to be completed by the 1st of September 1856, for the sum of £1,220, exclusive of the Lantern and its fixings. The latter did not arrive from England before the 10th of October, at which time everything was ready for its reception. On the 1st of November, Mr. Hay, the Keeper of the Escuminac Light, was sent by the Commissioners of Light Houses of the Gulf of Saint Lawrence, to examine the work, and found everything in excellent order, and gave a certificate accordingly. The Light was put into operation by Mr. Hay, and lit for the first time on the 4th of November, and proves to be a most excellent

one. The total expense of the Light House, Lantern, and everything complete, will be about £2,200, some small claims being included that have not yet been adjusted.

No. 2.

Grindstone Island.

Nothing has been done during the last season towards the erection of the Light House on this Island, for which an Appropriation was made in the Session of 1854: the delay being caused by the difficulty of obtaining a satisfactory title of sufficient ground for the purpose.

SAINT JOHN RIVER IMPROVEMENTS.

Last Session an Appropriation of £1,500 was made for the Improvement of the River Saint John, in continuation of similar Grants spread over the preceding six years. Since 1853, this expenditure has been under the immediate supervision of Colonel Maclauchlan, who has bestowed great time and attention to the subject, and undoubtedly produced a great improvement in the Navigation; his Report on this service for the last year, forming Appendix E, contains some valuable statistical information, and elucidates the general principles upon which the operations have been conducted. To complete the improvement undertaken by Colonel Maclauchlan would not require very much further expenditure between Fredericton and the Grand Falls, and a Grant of the same amount as the last year, continued for two seasons more, would probably produce as perfect a navigation as can be obtained without the expensive appliances of locks and draws, as upon the Saint Lawrence and other Rivers.

In addition to the operations under the superintendence of Colonel Maclauchlan, a sum of £119 16 9 has been expended in blowing off a portion of the Split Rock (so called) at the Grand Falls. It would require £125 to complete the removal of this rock, the service is attended with danger to the workmen, and there is only one particular state of the water at

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which it is at all practicable. The Grand Falls would appear to be too serious an obstruction to be materially improved by any small appropriations, and unless some comprehensive application of slides, dams and sluices is undertaken, this isolated and unsystematic expenditure for particular and special objects, would appear to be but very partially serviceable.

PUBLIC BUILDINGS.

During the Session of 1856, the sum of £750 was appropriated for the repairs and improvement of the Public Buildings during the year. Of this sum, it will be seen by reference to the detailed expenditure in Appendix A, that £333 14 6 had been paid up to the 31st of October, but the balance it is estimated will be sufficient to pay off all the liabilities that have been incurred. Of this sum £104 0 3 were old claims against the Commissioner of Public Buildings before the organization of the Board of Works.

The repairs to Government House have been heavy, from both main-building and out-houses having been suffered to fall very much out of order. The floor of the basement building has been renewed, and the whole of the outside sashes have been repaired and painted. In the main building painting and whitewashing has been done, and about £60 has been expended on the furniture of the public reception rooms, which was very much needed. The out-houses have been under-pinned and repaired, and new fencing and general repairs have been completed in the front of the main building. There is still a quantity of fencing that is decayed and requires renewal, and some arrangement is necessary to protect the bank in front of the house from the washing of the River, which is cutting it away.

It was found on examination that the building occupied by the Legislative Council, and part of the one occupied by the Executive Council, had the first floor timbers, over the foundations, completely rotted away, principally from want of ventilation. This has been remedied, new foundations, with proper circulation of air provided for, have been substituted,

new floor timbers put in, and general repairs have been made to both buildings. The Offices of the Clerk of the Executive Council, of the Chief Superintendent of Schools, and of the Clerk of the Supreme Court, have all been newly painted, whitewashed, and generally repaired. Some additions and repairs have been made to the Surveyor General's and Secretary's Offices, and the premises occupied by the House of Assembly have been new-fitted and improved.

The Legislative Library has been enlarged by taking in the apartments recently occupied by the Master of the Rolls, new book cases have been added, and new carpeting, painting, and remodelling, at an expense of £168 18 5, which was not provided for in the Grant of £750 for Public Buildings, and by which that amount will probably be exceeded.

A complete new set of Ladders has been made and placed in position both for the Government House and for the other Public Buildings. Those that were removed were some of them completely decayed, and would have been found quite unserviceable had they been required.

The sum of £700 will be necessary to keep the Public Buildings in repair next year; this amount being requisite to maintain them in proper condition.

PUBLIC WHARVES.

No. 1.

Low Water Landing at St. Andrews.

In 1855 appropriations to the amount of £259 5s. were made for the erection of a Low Water Landing at St. Andrews, in the County of Charlotte. This sum purchased the ground, and erected a Wharf extending to low water at ordinary tides. Last year a further appropriation of £125 was made to extend this Wharf so as to enable Steamers to lie afloat at extreme low water at the lowest tides. This required an addition of 80 feet to the previous work, which has been effected by building a block 50 feet long and 30 feet wide, and connecting it with the previous work by a Bridge of 30 feet span, resting on double timbers of large size. This extension makes the

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whole length of the Wharf 530 feet, and renders it, as it is believed, one of the most convenient Steam Boat landings in the Province. In addition to the Grant of £125 from the Legislature, the American Steamers contributed £75, and the inhabitants of St. Andrews raised a further sum of £30 towards making the Douglas Street approach an easier ascent, and railing in about 150 feet of the north side of the Wharf, which was exposed and dangerous during the prevalence of high winds. The Contract for the Block and Bridge was £225, of which there is still a balance due to the Contractor of £12 10s., besides which the Princess Street approach is incomplete, requiring plank flooring to make it available for vehicles, or convenient for pedestrians, and £35 is asked for this object, making altogether £47 10s., which is recommended to be appropriated next Session.

No. 2.

Tilley's Landing.

The Wharf at Tilley's Landing on the Saint John River, 20 miles below Fredericton, has been repaired this season at a cost of about £40, partly taken from the Great Road money appropriated for the Road terminating at the Wharf from the Little River Mills on the Fredericton and Richibucto Road, and partly from a Bye Road Grant that was not required for the purpose for which it was appropriated. There is a great deal of business done at this Wharf, and these repairs, though not sanctioned previously, have been an useful application of the public money, and given satisfaction in the neighbourhood.

In conclusion, the undersigned recognizes the propriety of strict economy in the performance of all the work committed to this Department, and believes that this is to be accomplished, not by the use of inferior or temporary materials, but by doing all new work in a thorough and durable manner; and rather repairing up present works to last a few years longer than making any sacrifice for the sake of equalizing the expenditure on each Road. By this means it is hoped that any addi-

tional outlay involved in the construction of permanent works, may be made up by prolonging the existence, of what may be at present temporary and perishable, as long as possible; and then re-erecting them of a more durable and superior construction. By this means, as Bridges, &c. fail in every part of the Province, permanent structures would by degrees take their place, and the decreasing repairs each year on the new work would permit in a few years, the introduction of other and more expensive improvements; and though strict equality in the distribution of the Provincial Grants could not every year be obtained, yet the average of a number of seasons would remove even this objection, and restore the present equilibrium.

A large outlay, probably 20 per cent. of the whole sum, has heretofore been occasioned by what must be looked upon as an unfortunate opinion, prevalent, but nevertheless erroneous. It is considered that Public Works, and the expenditure of public money is a local benefit, rather than a general good; and the object hitherto appears to have been to secure the largest share of the outlay for each locality, irrespective of its wants or position; and large sums have been spent, Bridges built, and outlay incurred where such have not been absolutely necessary. This all proceeds from a mistaken notion of the requirements of the country, and the best way of promoting its prosperity, and has undoubtedly not contributed to the improvement of its internal communication, or its position with respect to neighbouring Provinces. If the public money is wasted where it is not wanted, permanent work cannot be afforded where it is necessary, and on the contrary, by practising economy throughout, means are furnished, to finish what is undertaken, in a better style of workmanship, and to produce results that must soon tell upon the prosperity of the country.

And the foregoing is respectfully submitted.

C. MACPHERSON,
Chief Commissioner.

Appendix A.

No. 1.

STATEMENT shewing the Amount expended on Government Buildings in Fredericton, from 7th February to 31st October 1856.

Post Office.

Thomas Stewart, - - - - -	£0 11 1
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House of Assembly Building.

R. Lipset, - - - - -	£5 17 6
R. Dunn, - - - - -	8 14 7
Thos. Williams, - - - - -	2 0 0
R. H. Payne, - - - - -	3 10 0
Thos. Dowling, - - - - -	0 9 0
George Lawrence, - - - - -	3 0 0
L. McLean, - - - - -	0 12 6
	24 3 7

Executive Council,

R. Dunn, - - - - -	£26 5 0
Thos. Stewart, - - - - -	1 13 8
	27 18 8

Legislative Council.

E. Elliott, - - - - -	£1 11 0
T. G. Allen & Co. - - - - -	10 4 3
	11 15 3

Crown Land Office.

R. H. Payne, - - - - -	0 17 0
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Secretary's Office.

Thos. Williams, - - - - -	0 10 0
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Judges and Clerk of the Pleas.

E. O'Brien, - - - - -	£0 5 3
J. Nisbet, - - - - -	5 0 0
	5 5 3

Superintendent of Schools.

Mrs. Driscoll, - - - - -	0 6 0
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Legislative Library.

Thos. Aitkin, - - - - -	9 15 0
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Office Board of Works, 31st October 1856.

ASA COY, Sec'y.

No. 2.

**STATEMENT of Claims on the late Commissioner of
Government Buildings, paid by the Board of Works
between 7th February and 31st October 1856.**

W. P. Taylor,						£5	12	6
A. Smith,						3	16	6
J. M'Donald,						33	1	1
Hatheway & Small,						1	0	0
J. Neill,						3	12	0
R. Chestnut,						27	11	9
R. Woods,						2	10	0
A. H. Clark,						24	12	4
J. S. Conner,						2	4	1
						£104 0 3		

Office Board of Works, 31st October 1856.

ASA COY, Sec'y.

£81 1 10

No. 3.

STATEMENT shewing Payments made by the Board
of Works on account of the House of Assembly, from
7th February to 31st October 1856.

H. B. Rainsford,	-	-	-	-	-	-	£29	7	2
J. Reilly,	-	-	-	-	-	-	0	12	0
John Holland,	-	-	-	-	-	-	2	6	3
Andrew Marr,	-	-	-	-	-	-	2	0	0
Moses Brown,	-	-	-	-	-	-	1	7	6
Daniel Hurley,	-	-	-	-	-	-	1	7	6
M. Driscoll,	-	-	-	-	-	-	0	4	9
J. Moore,	-	-	-	-	-	-	1	10	0
E. O'Brien,	-	-	-	-	-	-	3	12	6
E. Williams,	-	-	-	-	-	-	3	1	0
J. Neill,	-	-	-	-	-	-	45	11	10
J. Sullivan,	-	-	-	-	-	-	2	0	0

 £93 0 6

Office Board of Works, 31st October 1856.

ASA COY, Sec'y.

148 12 5

 £229 14 3

ASA COY, Sec'y.

Commissioner of
Board of Works
October 1856.

£5 12 6

3 16 6

33 1 1

1 0 0

3 12 0

27 11 9

2 10 0

24 12 4

2 4 1

 £104 0 3

ASA COY, Sec'y.

No. 4.

STATEMENT shewing the Amount advanced on un-
finished work, from 7th February to 31st October 1856.

Bridges.

North West Bridge,	-	-	-	-	-	-	£4,986	8	6
Hampton Ferry,	-	-	-	-	-	-	1,731	2	6
Sullivan Creek,	-	-	-	-	-	-	1,415	12	0
South Bay,	-	-	-	-	-	-	914	11	3
Musquash,	-	-	-	-	-	-	715	0	0
Hammond River,	-	-	-	-	-	-	400	0	0
Sackville,	-	-	-	-	-	-	6	10	0
Grand Falls,	-	-	-	-	-	-	0	6	3
Trout Creek,	-	-	-	-	-	-	0	5	0
Estey Creek,	-	-	-	-	-	-	0	12	0
Ransom Brook Bridge, Albert,	-	-	-	-	-	-	50	0	0
Jos Tomlinson, on account of Bridges generally,	-	-	-	-	-	-	525	0	0
L. R. Coombes, to repair Bridges in Victoria, 1855,	-	-	-	-	-	-	100	0	0
Miscoc Light House Buildings,	-	-	-	-	-	-	441	5	11
Richibucto Harbour,	-	-	-	-	-	-	9	4	6

 £11,328 17 1¹

Office Board of Works, 31st October 1856.

ASA COY, Sec'y.

No. 5.

STATEMENT shewing the Sums paid for petty repairs on the Great Roads from 7th February to 31st October 1856.

A. Cormack,	£2	12	0	Repairing Renous Bridge.
W. Buck, St. Andrews,	5	0	0	On account of Plans.
Alex. Goodfellow,	11	14	3	Balance due him.
John Brookfield,	5	0	0	Bridge Model.
Joseph Biggs, Sea.	4	5	0	Balance due him.
Alexander Love,	3	15	0	Balance due them 1852,
William Gregg,	1	12	6	under N.r. E. Simonds.
N. Hubbard, Esq.	3	1	9	Services connected with
				Estey Creek Bridge.
	£37	0	6	

Office Board of Works, 31st October 1856.

ASA COY, Sec'y.

No. 6.

STATEMENT shewing the amount of Travelling Expenses of the Members of the Board of Works, from 7th February to 31st October 1856.

Chief Commissioner, from 7th Feb. to 19th May, including two trips to Hampton Ferry Bridge, -	£12	13	1
Same, trip to Saint John 27th May, - -	3	12	6
Secretary in June, viz:—			
To South Bay Bridge, - - - 10s. Od.			
Dredge at Grand Lake, - - - 11s. 3d.			
Sullivan Creek Bridge, - - - 49s. Od.			
			3 10 3
The Hon. Surveyor General, inspecting Bridges in the Eastern Counties in October, - -	£17	14	0
Less—This balance still unpaid, -	2	19	1
			14 14 11
			£34 10 9

Office Board of Works, 31st October 1856.

ASA COY, Sec'y.

No. 7.

STATEMENT shewing Contingencies paid in the Office
of the Board of Works, from 7th February to 31st
October 1856.

Firewood and sawing,	-	-	-	-	-	£2	15	0
A Copying Press,	-	-	-	-	-	4	0	0
Making Fires, sweeping Office, &c. 18 months to								
31st October,	-	-	-	-	-	18	0	0
Stationery, Binding, &c. &c.	-	-	-	-	-	10	2	2
						<u>£34</u>	<u>17</u>	<u>2</u>

Office Board of Works, 31st October 1856.

ASA COY, Sec'y.

No. 8.

STATEMENT shewing the Amount expended in work-
ing the Dredging Machine, from 7th February to 31st
October 1856.

H. S. Beek,	-	-	-	-	-	-	£0	4	4
B. Chase,	-	-	-	-	-	-	5	0	0
Sheriff Wolhaupter,	-	-	-	-	-	-	6	10	10
B. Kenney,	-	-	-	-	-	-	0	11	3
J. Marsh,	-	-	-	-	-	-	0	17	6
Mrs. Johnson,	-	-	-	-	-	-	2	13	4
N. Cameron,	-	-	-	-	-	-	9	6	8
S. Barker,	-	-	-	-	-	-	20	13	4
W. Morgan,	-	-	-	-	-	-	5	13	1
Alexander Mitchell,	-	-	-	-	-	-	9	11	10
J. Ross,	-	-	-	-	-	-	14	10	9
Jardine & Co.	-	-	-	-	-	-	70	17	4
T. L. Simmons,	-	-	-	-	-	-	0	12	6
D. Scott & Co.	-	-	-	-	-	-	2	13	7
Hatheway & Small,	-	-	-	-	-	-	53	19	3
J. M. Barker,	-	-	-	-	-	-	150	0	0
Men's wages,	-	-	-	-	-	-	189	12	8
Fuel,	-	-	-	-	-	-	254	13	9
New Scow,	-	-	-	-	-	-	77	0	0
J. M. Barker, out-fits and other contingencies,	-	-	-	-	-	-	87	12	0
Advanced to Master to meet current expenses,	-	-	-	-	-	-	113	5	0
Same to S. Barker, on account,	-	-	-	-	-	-	35	0	0
							<u>£1110</u>	<u>19</u>	<u>0</u>

Office Board of Works, 31st October 1856.

5

ASA COY, Sec'y.

For petty repairs
ary to 31st Oc-

ng Renous Bridge.
ount of Plans.
e due him.
Model.
e due him.
ce due them 1852,
Mr. E. Simonds.
s connected with
y Creek Bridge.

ASA COY, Sec'y.

f Travelling Ex-
of Works, from

ay,
£12 13 1
3 12 6

0d.
3d.
0d.
3 10 3

0
1
14 14 11
£34 10 9

ASA COY, Sec'y.

No. 9.

STATEMENT of Sums paid this year for work done prior to 7th February 1856, and on account of Claims unsettled on the 31st October 1856.

L. R. Coombes, - - - - -	£105	0	0
R. H. Payne, - - - - -	5	0	0
A. Limerick, - - - - -	25	0	0
Thomas Rutter, - - - - -	25	0	0
R. Dunn, - - - - -	15	0	0
W. M. Buck, - - - - -	11	0	0
A. L. Light, - - - - -	50	0	0
Claims for labour on Great Roads in Charlotte County, under George Anderson, while Supervisor, - - - - -	75	18	11
Estate of Bryan M'Quade, for labour under Supervisor Asa Dow, - - - - -	34	14	2
W. E. Perley, Esq. M. P. P., balance due him, -	25	5	0
	<u>£371</u>	<u>18</u>	<u>1</u>

Office Board of Works, 31st October 1856.

ASA COY, Sec'y.

No. 10.

STATEMENT of Warrants on the Provincial Treasurer in favour of the Board of Works, from 7th February to 31st October 1856.

No.	Amount.	Service.
117	£100 0 0	Great Roads, Victoria, L. R. Coombes.
119	1,041 14 6	Government Buildings.
120	600 0 0	Sullivan Bridge.
121	52 2 3	Towing Path, Saint John River.
122	50 0 0	Working expenses, Dredge.
123	50 0 0	A. L. Light.
124	30 17 9	Travelling expenses, Members of Board.
125	12 18 4	Office Contingencies.
126	6 17 6	Great Roads, petty repairs.
127	50 0 0	Rebuilding Bridge, Ransom Brook, Albert.
172	200 0 0	Hampton Ferry Bridge.
	100 0 0	South Bay Bridge.
174	700 0 0	N. W. Bridge, Miramichi, R. Hutchison.
182	45 0 0	Repairing old Bridge, Musquash.

Statement of Warrants.—Continued.

No.	Amount.	Service.
183	£150 0 0	Missiquash Bridge.
	0 10 0	Short in Warrant 94 of last year.
184	250 0 0	Hammond River Bridge.
	200 0 0	Hampton Ferry Bridge.
187	200 0 0	New Bridge, Musquash.
209	100 0 0	Great Roads, by Asa Dow.
	150 0 0	Sullivan Bridge.
216	50 0 0	Great Roads, by J. Robertson.
222	6 14 6	Miscoe Light House Building.
	25 0 0	Great Road, petty repairs.
	50 0 0	Sullivan Bridge.
223	70 10 0	Government Buildings.
224	100 0 0	Working expenses, Dredge.
257	830 0 0	Great Roads, &c.
279	1,827 0 0	Great Roads.
288	25 0 0	Great Roads, by J. Robertson.
342	3,861 8 4	Great Roads, &c.
345	225 0 0	Great Roads.
383	175 5 7	Working expenses, Dredge.
397	352 19 4	Do. do.
398	574 8 4	Government Buildings.
401	690 0 0	Great Roads.
402	291 7 3	Sullivan Bridge.
418	184 14 2	New Bridge, Musquash, Great Roads, &c.
419	406 13 4	Miscoe Light House.
420	163 19 3	South Bay Bridge, by J. Clark.
422	250 0 0	Bridges generally, by J. Tomlinson.
429	280 0 0	Hampton Ferry Bridge.
430	500 0 0	Sullivan Bridge.
435	3,535 0 0	Great Roads.
436	4,819 4 2	Do.
458	3,000 0 0	N. W. Bridge, Miramichi.
459	200 0 0	Hampton Ferry Bridge.
476	1,258 0 5	Bridges and Great Roads, &c.
478	1,276 8 6	N. W. Bridge, Miramichi.
483	2,000 0 0	Board of Works, general purposes.
	£31,118 13 6	

Office Board of Works, 31st October 1856.

ASA COY, Sec'y.

for work done
count of Claims

£105 0 0
 5 0 0
 25 0 0
 25 0 0
 15 0 0
 11 0 0
 50 0 0

 75 18 11

 34 14 2
 25 5 0

 £371 18 1

ASA COY, Sec'y.

Provincial Treasurer
 from 7th February

ce.

L. R. Coombes.
 s.

John River.
 dredge.

Members of Board.

repairs.
 Ransom Brook, Albert.
 ge.

michi, R. Hutchison.
 e, Musquash.

No. 11.

STATEMENT shewing the Total Amount expended by the Board of Works, from 7th February to 31st October 1856, as detailed in the foregoing Statements, Nos. 1, 2, 3, 4, 5, 6, 7, 8, and 9.

No. 1. Government Buildings,	£229	14	3
2. Late Commissioner of do.	104	0	3
3. House of Assembly,	93	0	6
4. Unfinished work,	11,328	17	11
5. Great Roads, petty expenses,	37	0	6
6. Travelling expenses,	34	10	9
7. Office Contingencies,	34	17	2
8. Dredging Machine,	1,110	19	0
9. Sundry claims,	371	18	1
Sums advanced Supervisors, Appendix B,	£14,060	6	11
Less this sum paid after 31st October 1856,	440	6	11
	£13,620	0	0
Add this sum, part of War. No. 435, undrawn from Treasury,	400	0	0
		14,020	0 0
Balance due this Department last year,	£1,865	2	3
Less this sum over-paid James Landy in 1855,	1	17	6
		1,863	4 9
Balance in Central Bank, on deposit,	-	-	1,940 10 4
		£31,168	13 6
Amount received from Provincial Treas. per Statement No. 10,	£31,118	13	6
Special Appropriation from Gloucester Bye Roads, S. Caraque Bridge,	50	0	0
		£31,168	13 6

Office Board of Works, 31st October 1856.

ASA COY, Sec'y.

ount expended
bruary to 31st
ing Statements,

£229 14 3
104 0 3
93 0 6
11,328 17 11
37 0 6
34 10 9
34 17 2
1,110 19 0
371 18 1

14,020 0 0

1,863 4 9
1,940 10 4

£31,168 13 6

£31,168 13 6

ASA COY, Sec'y.

Appendix B.

PARTICULARS AND ESTIMATE FOR 1857 FOR EACH ROAD.

No.	Name, or Portion of Road.	Miles.	Bridges.	Grants in 1856.	Name of Supervisor for 1856.	Bridges to build.	Cost of Bridges.	Cost of Road.	Total for 1857.
Part of 1	Saint John to Hayward's Mills,	65	13	£875 0 0	R. S. Matthews, (1)	1	£125	£500	£625
" 1	Hayward's Mills to Nova Scotia Line,	67	15	513 3 0	S. C. Charters,	..	..	700	700
" 2	Saint John to Lepreau,	26	9	250 0 0	W. H. Rourke,	4	260	440	700
" 3	Saint Andrews to Lepreau,	40	7	300 0 0	Stuart Seelye, (1)	..	..	200	200
" 4	Bend to Shediac,	14	1	200 0 0	John Welling, (2)	1	..	60	130
" 5	Shediac to Dorchester,	21	6	100 0 0	Do.	..	..	300	300
" 6	Richibucto to Richibucto,	36	23	400 0 0	W. M. Kelly, (1)	..	..	300	300
" 7	Richibucto to Chatham,	40	13	743 16 11	A. Davidson,	1	..	250	250
" 8	Miramichi to Pokemouche,	62	14	550 0 0	Do.	..	..	450	600
" 9	Pokemouche to Bathurst,	51	9	200 0 0	Joseph Sewell,	3	300	100	400
" 10	Pokemouche to Belledune,	23	8	250 0 0	G. Wilson,	..	..	200	200
" 11	Belledune to Belledune,	25	29	400 0 0	Arch. McLean,	1	130	470	600
" 12	Belledune to Belledune,	95	7	100 0 0	W. M. Kelly, (2)	2	445	155	600
" 13	Belledune to Belledune,	95	7	100 0 0	M. O'Brien,	2	..	350	950
" 14	Belledune to Belledune,	102	30	850 0 0	Francis Elliot,	3	600	350	950
" 15	Belledune to Belledune,	35	20	925 0 0	Arch. McLean,	3	350	400	750
" 16	Belledune to Belledune,	31	15	225 0 0	Philip Nae, Jun.	3	640	340	980
" 17	Belledune to Belledune,	63	52	560 0 0	Asa Dow, (1)	1	140	160	300
" 18	Belledune to Belledune,	40	13	300 0 0	James Ketchum,	..	..	200	200
" 19	Belledune to Belledune,	33	8	300 0 0	G. W. Curry, (1)	3	650	200	850
" 20	Belledune to Belledune,	38	22	525 0 0	Do.	1	175	75	250
" 21	Belledune to Belledune,	12	3	50 0 0	F. Gagnon, (1)	..	..	30	30
" 22	Belledune to Belledune,	32	12	200 0 0	Do.	1	..	160	160
" 23	Belledune to Belledune,	3	3	200 0 0	G. W. Curry, (2)	..	..	150	150
" 24	Belledune to Belledune,	5	..	50 0 0	Do.	..	..	135	135
" 25	Belledune to Belledune,	9	..	100 0 0	Asa Dow, (2)	..	..	..	..
" 26	Belledune to Belledune,	11	..	100 0 0	Do.	..	..	..	..
" 27	Belledune to Belledune,	46	4	175 0 0	L. B. Ramsford,	1	165	..	..
" 28	Belledune to Belledune,	34	9	175 0 0	W. H. Nowat, (1)	1	..	..	..
Carried forward,		1031	355	£3,518 19 11		29	£4,630	£5,775	£10,405

Particulars and Estimate for 1857 for each Road.—Continued.

No.	Name, or Portion of Road.	Miles.	Bridges.	Grant for 1856.	Supervisors for 1856.	Bridges to build.	Cost of Bridges.	Cost of Roads.	Total for 1857.
24	<i>Brought forward,</i> Waveig to Saint Stephens,	1051	355	£9,518 19 11	W. H. Morat, (2)	28	£4,030	£5,775	£10,405
25	Rox to Oak Bay,	9	5	446 7 0	Do. (3)	..	..	75	75
26	Oak Bay to Little Digdegwash,	16	1	100 0 0	J. Grimmer, (1)	..	..	75	75
27	Eel River to Little Digdegwash,	30	4	235 0 0	Asa Dow, (4)	..	..	160	100
28	Dead Water Brook to Saint Stephens,	17	6	100 0 0	J. Grimmer, (2)	1	250	50	300
29	Lower Trout Brook to Magaguadavic,	38	4	175 0 0	Stuart Seelye, (2)	..	..	100	100
30	Salisbury to Hopewell Court House,	30	9	300 0 0	Isaac Gross, (1)	1	150	150	300
31	Harvey to Hopewell Court House,	14	8	100 0 0	Thos. McClean, (1)	..	..	200	200
32	Isaac Derry's to Point Wolf,	25	4	250 0 0	J. A. Reid, (2)	1	300	300	600
33	Crooked Creek to M ^r Manur's,	20	1	150 0 0	Thos. McClean, (1)	1	150	100	250
34	Loch Lomond to M ^r Manur's,	41	8	450 0 0	John Jordan, (2)	1	150	25	25
35	Saint John to Quaco,	30	12	500 0 0	R. S. Matthews, (2)	..	..	25	25
36	Hampton to Bellisle,	95	..	5 0 0	Do. (3)	1	125	100	175
37	Scribner's to Bellisle,	23	4	900 0 0	J. B. Perkins, (1)	..	..	125	100
38	Nerepis to Gagetown,	30	10	100 0 0	Moses Coburn, (1)	1	25	135	150
39	Jennet to Fingert's,	29	5	150 0 0	John Reddon, (2)	..	..	100	100
40	Cleary's to Fingert's,	40	3	150 0 0	George Oulton, (1)	..	..	450	450
41	Barter's Landing to Queen's County,	56	9	200 0 0	Moses Coburn, (2)	..	..	345	345
42	Through Queen's County,	44	10	225 0 0	W. Fitzgerald, (3)	..	..	150	150
43	Queen's County Line to Richibucto,	12	6	400 0 0	Moses Coburn, (3)	1	75	75	150
44	Tiller's Landing to Little River,	12	3	100 0 0	John Hagarty,	..	..	..	..
45	Sussex Vale to Baptist Meeting,	12	3	100 0 0	..	..	..	..	..
Totals,		1,630	470	£14,060 6 11		35	£5,705	£8,395	£14,100

39	Queen's County Line to Richmond,	12	6	100 0 0	1	15	£14,100
40	Tilley's Landing to Little River,	12	3	100 0 0	35	£5,705	£8,395
41	Sussex Vale to Baptist Meeting,	12	3	100 0 0			
42		1,630	470	£14,060 6 11			
Totals,							

Appendix C.

Statement of Amounts over-expended on the Roads by the Supervisors, and of Balances in their hands, unexpended on the 31st October 1856.

Road.	Supervisors.	Over-expended.	Unexpended.	Remarks.
Part of 1	R. S. Mathews,	£57 11 4	£2 19 9	
" 1	S. C. Chatters,	..	6 13 7	
" 2	W. H. Rourke,	..	33 15 0	Unvouched charges of 1855.
" 4	Stuart Seeley,	3 13 9	2 8 6	
" 5	W. Welles,	75 19 7	..	Over-expenditure incurred in 1855.
" 6	W. M. Kelly,	259 3 8	..	do.
" 7	A. Davidson,	0 0 10	10 11 7	
" 8	J. Savell,	..	47 7 8	
" 9	G. Wilson,	..	1 1 8	
" 10	A. Ramsay,	..	41 16 0	
Part of 11	M. O'Brian,	23 5 1	..	
" 12	D. Crocker,	23 13 5	..	
Part of 13	F. Elliot,	59 14 6	..	£20 of this authorized by Board of Works.
" 13	A. McLean,	72 10 1	..	£36 6 7 over-expended in 1855.
" 14	P. Nae,	..	..	To pay the Contractor on Little Falls Bridge.
" 15	Asa Dow,	..	3 6 10	
" 16	James Ketchum,	..	193 2 1	
" 17	G. W. Curry,	3 10 0	16 11 6	
" 18	P. Gagnon,	..	..	
" 23	L. B. Rainsford,	7 13 11	..	
" 23	D. Mowat,	0 11 1	..	
" 26	J. Gilmmer,	..	18 8 1	
" 29	J. McClean,	..	9 4 6	
" 30	J. A. Reid,	..	21 16 9	
" 32	J. Jordan,	..	0 9 6	
" 33	J. B. Perkins,	..	..	
" 36	M. Coburn,	20 3 0	..	
" 37	J. Robertson,	5 14 11	..	
" 38	G. Oulton,	3 19 1	..	
Part of 39	J. C. Burpee,	..	1 14 0	
		£636 17 3	£403 9 0	

Appendix D.---NEW BRIDGES built by Supervisors

NAME OF GREAT ROAD.	NAME OF STREAM, &c.	Extreme Length.	Spans.		Breadth between Handrail.
			No.	Length.	
St. John to Nova Scotia,	Fox Creek,	Feet. 90	3	Feet. 20	Feet. 20
Do.	Mill Stream, 42 M. from St. John,	200	1	75	18
St. John to St. Andrews,	Popogan,	180	1	36	16
Richibucto to Chatham,	Big North West Richibucto,	620	2	40	
Miramichi to Pokemouche,	Little Tracadie,	617	2	70	20
Bathurst to Belledune,	Mill Stream,				
Belledune to Metis,	Frith's Brook,	80			
Do.	Rorety's Valley,	229			
Newcastle to Bathurst,	Douglas Town,	236	1	61	
Do.	Little Escadille,	45			
Newcastle to Fredericton,	Dyer's Brook,	192	1	20	20
Do.	White Rapids,	100	1	20	20
Fredericton to Woodstock,	Maclauchlan's Creek,	40	1	4	20
Do.	Lee's Creek,	60	1	4	20
Do.	School House Bridge,	60	1	4	20
Do.	Raspberry Creek,	30	1	4	24
Woodstock to River DeChute,	At Widow Shaw's,	90	1	20	22
River DeChute to Grand Falls,	Lynch Farm, Andover,	68	4	17	22
Do.	Wark's Mill Stream,	160	1	60	22
Grand Falls to Canada Line,	Madawaska Little Falls,	220	1	85	20
Little Falls to St. Francis,	Firman Cyr's Brook.	120			20
Do.	Oliver M'Lean's,	130			
Grand Falls to American Line,	Deep Gully, Grand Falls,	76	2	16	22
Fredericton to St. Andrews,	Waweig,	80	1	30	19' 6"
Waweig to St. Stephens,	Waweig, at Oak Bay,	600			
Oak Bay to Eel River.	Little Digdegush,	200	1	24	16
Trout Brook to Magaguadavic,	Linton Stream,	147	4	18	17
Hopewell to Harvey,	Turtle Creek,	120	1	40	18
Isaac Derry's to Point Wolf,	Anderson's Hollow,	200	10	20	19
St. John to Crooked Creek,	Beard's Stream,	260	1	30	18
St. John to Quaco,	Gardner's Creek,	66			
Jemseg to Finger Board,	Foster's Mill Stream,	70	1	8	
Fredericton to Kent County Line,	Burpee's Mill Stream,	150	1	35	20

uilt by Supervisors

Remains length.	Spans.		Breadth between Handrail.
	No.	Length.	
ect. 90	3	Feet. 20	Feet. 20
000	1	75	18
180	1	36	16
320	2	40	
617	2	70	20
80			
229			
236	1	81	
45			
192	1	20	20
100	1	20	20
40	1	4	20
60	1	4	20
60	1	4	20
30	1	4	24
90	1	20	22
68	4	17	22
160	1	60	22
220	1	85	20
120			20
130			
76	2	16	22
80	1	30	19' 6"
600			
200	1	24	16
147	4	18	17
120	1	40	18
200	10	20	19
260	1	30	18
66			
70	1	8	
150	1	35	20

during 1856, with principal Dimensions and Materials.

MATERIALS USED.				Cost, exclusive of Commiss'n.	DESCRIPTION.
Abutments.	Stringers.	Flooring.	Handrails.		
Spruce,	Pine,	Spruce,	Pine,	£56 10 0	Solid abutments, framed bents.
Hacmatac,	Do.	Pine,	Do.	256 11 6	Queen post truss.
Pine,	Do.	Hemlock,		135 0 0	Spring stringer on each side.
Hemlock,	Hemlock,	Cedar,		535 0 0	Part built in 1845.
Do.	Pine,	Pine,	Do.	813 14 8	
Cedar.	Cedar,	Cedar,	Cedar,	35 0 0	
Do.	Do.	Do.	Do.	40 0 0	
Pine,	Pine,			280 0 0	Queen post truss.
Do.	Do.			35 0 0	
Hemlock,	Hemlock,	Hemlock,		115 0 0	
Cedar & Hemlock	Do.	Do.		119 15 0	
Stone,	Cedar,	Gravel,	Pine,	33 0 0	
Do.	Do.	Do.	Do.	59 0 0	
Do.	Do.	Do.	Do.	35 0 0	
Do.	Do.	Do.	None needed,	25 0 0	
Cedar,	Do.	Spruce,	Pine,	27 10 0	
Do.	Do.	Do.	Do.	25 0 0	
Do.	Pine,	Do.	Do.	148 10 6	Queen post truss.
Do.	Do.	Do.	Do.	191 0 0	Do. do. not finished.
Pine,	Cedar,	Cedar,		62 5 9	
Cedar,	Do.	Do.		41 0 0	
Do.	Do.	Spruce,	Do.	39 0 0	
Granite,	Pine,	Cedar,	Do.	76 0 0	
1 Granite, } 1 Hemlock, }	Do.	Hemlock,	Do.	336 0 0	
Cedar,	Do.	Cedar,		99 10 0	
Hemlock,	Do.	Hemlock.	Spruce,	59 0 0	
Pitch Pine,	Pitch Pine,	Spruce,		49 0 0	
Spruce,	Spruce,	Do.	Do.	79 0 0	
Hemlock,	Pine,	Hemlock,	Cedar,	208 0 0	2 framed bents in span.
				25 0 0	
Pine,	Tamarack,	Tamarack		25 0 0	
Hemlock,	Pine,			44 0 0	King post.

Appendix E.

REPORT from J. A. Maclauchlan, Esq., on the Improvement of the Navigation of the River Saint John.

Kingswood, December 4, 1856.

SIR,—I beg leave to inform you that the public work under my personal superintendence, for the improvement of the navigation between Fredericton and the Grand Falls, was closed towards the end of October; also, the Account of Expenditure forwarded to the Auditor General; and I have now the honor to submit this my fourth Annual Report, for the information of the Board of Works.

With a view to the completion of the improvements in the River above Woodstock, I left the Meductic Falls in June with my party for the Grand Falls, intending to confine my operations through the season between that and Kelly's Rapid, 16 miles below the entrance of the Tobique River; but, I regret to say, after progressing with the work at Kelly's and one of the ledges in the Tobique Rapid, together with the completion of the White, DeFemme, and Black Rapids, and leaving only Watson's and Little River Rapids to finish the improvements as far down as the Restook River, I was then obliged, in consequence of the very unusual high freshet in August of nearly nine feet, to leave that section of the River, and to give my attention during the remainder of the season between Woodstock and the Meductic Falls; when I effected the completion of Betts' Rapid, the removal of Watson's or Nay's Rocks, 7 miles below Woodstock, so destructive to rafts passing down the River, and also finishing the upper approaches to the Meductic Falls, that is, at Ingraham's and Brown's Points, where from the contraction of the River to within 500 feet, occasioned a very heavy swell, and made it both difficult and dangerous for Steamers and other boats, &c., to pass previous to any of the obstructions being removed.

In order to afford information to the Captains of Steamers and other persons, touching the available depth of water in the several Rapids, I have come to the conclusion, as the obstruc-

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tions are removed, to have a rock painted white in each of them, and shewing the number of feet by lines and figures in black. One of these is now observable at the head of the White Rapids, on the left bank or right ascending side of the River. However, in giving this information, I wish it to be understood that these Beacons are not placed with an intention of shewing any uniform depth of water in the main River, but confined altogether to the Rapids; because, the attention I have given to the rise and fall of the River during the last four years, has fully satisfied me that no uniform depth of water can be depended upon after the Spring freshet, and which may be attributed to two causes; first, when the rise is from the head of the River or above the Grand Falls, as was the case this season, and the tributaries below it discharging little or no water, consequently from the great contraction of the River, at least one third, from the Grand Falls down for some miles must result in a sudden rise, and remain high when the lower part of the Saint John would be comparatively low. Then again, if the freshet is altogether occasioned by the tributaries some miles below the Grand Falls, that section of the River would be high, when the upper or contracted portion of it, in all probability, would be low.

In fact, I have frequently observed through the Summer season the tributaries from both banks of the River, and only within a few miles of each other, the one discharging a heavy flood of water, and the other nothing more than the ordinary Summer quantity, so that I conceive it almost impossible to expect any uniform depth of water in the main River, unless during the Spring freshet, when from rain and the melting of snow and ice, the tributaries then contribute equally to keep up a uniform depth in the main River, at least for a few weeks.

For the purpose of showing the direction and centre of the opening or cut through the Bellevisor Bar, 4 miles above the Meductic Falls, I have placed a large cedar post, painted white, on each bank of the River.

This season I have completed two Towing Paths of three quarters of a mile each, and eight feet in width on the right

ascending side of the River ; one in the vicinity of Eel River, to enable the Tow Boats to pass the extensive ledges at David Phillips' ; the other at the Governor's Table Rock, so called, two miles above the Meductic Falls.

The blasting operations this year have taken over 800 lbs. of powder, with about the same number of tin tubes used under water, from three quarters of an inch to an inch in diameter, and from four inches to a foot in length ; also a quantity of fuse, and about ten thousand steel drills sharpened ; but much more powder, &c. would have been expended, only that the use of broad steel chisels with the aid of sledges were found to expedite the work much more rapidly above and below water, upon some of the ledges, than by blasting.

As I have not thought it necessary in this Report to enter into detail of the improvements effected in the navigation during the preceding years, I have attached a Map of the River shewing the position of all the obstructions removed by me since August 1853.

The Boats, Scows, &c. &c., with tools and other stores, are as heretofore left in charge of T. C. Atherton, Esquire, at the Meductic Falls.

Having enumerated the several works progressed with this season, I wish to advert to some of the remaining obstructions in the River, and to conclude this Report with a few general remarks.

The only Rapids requiring attention above Woodstock are Watson's, Little River, Tobique, Muinic, Guisquits, and Kelly's, which in my opinion can be finished next season, provided the River is not too high for carrying on the works to advantage. Then all that remains of the rocky obstructions below Woodstock, are from Eel River to the Nackawickac, including the Meductic Falls, which requires a straight channel made through them for the safe passage of Steamers when the River is below a quarter freshet ; but this work cannot be progressed with unless the water is extremely low, owing to the rapid and agitated current, which make it both difficult and dangerous for blasting operations.

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In all my Annual Reports I recommended the use of a Steam Dredging Machine as being the most speedy and economical process of opening the Bars from Fredericton upwards; and I had entertained a hope that the Boat built by Government last year, could have been employed on that service, but I am now satisfied from its model and draught of water, (upwards of 5 feet), it cannot be used to any advantage; and therefore I fear that the Bars must still continue to be improved in the same manner I opened the Bellevisor and Knapp's, by men and horse-teams, with the aid of scrapers, which is a most laborious and at the same time tedious method of operating upon them.

Anxious to obtain correct information with respect to the trips made by Steamers and Tow Boats during the season, together with the number of passengers and quantity of freight taken to the upper Saint John, I am now enabled to state, through the kind assistance of Mr. John T. Allen, Steamboat Agent at Woodstock, and Mr. Dowling the Wharfinger at Fredericton, that the Steamers commenced running this year the last week in April, that is, the Richmond, Reindeer, Bonnie Doon, and Pierce, but unfortunately the latter when making her third trip to Woodstock was totally destroyed by the bursting of her boiler, which caused the loss of several lives and some freight. These Steamers, from the low state of the River, were prevented from running after the 22nd of June, a month earlier than last year, but made a few trips between the 8th of July and 22nd of August, and again between the 26th of September and 15th of October; during which time no Boat made over 28 trips from Fredericton, and the number of passengers conveyed by them was over 4,000, with about 10,000 barrels bulk of provisions and goods.

The Tow Boats made 264 trips from Fredericton this season, and conveyed to Woodstock, Tobique, and the Grand Falls, over 34,000 barrels bulk of provisions and goods, 15,000 of which was taken up by them after the Steamers stopped running, between the 15th of October and the 15th of November, when the navigation closed.

Having in my Report of 1853 particularly alluded to the

Tow Boats, I must again beg to repeat what I then said on that subject, to show the necessity of carrying out my propositions in order to facilitate their trips to the upper Saint John; and I would now only ask, what would have been the situation of the inhabitants in that section of the Province, that is, the Counties of Victoria, Carleton, and the upper part of York, had the 34,000 barrels of supplies, taken up by these Boats, remained in the Storehouses in Fredericton for want of conveyance?

"From my constant intercourse through the season with persons in charge of Tow Boats, I have been enabled to ascertain with some degree of accuracy, the number employed in the transit of provisions and goods between Fredericton and the upper Saint John. These Boats number about fifty, and generally make from ten to twelve trips during the season, with an average load of one hundred and ten to one hundred and twenty barrels allowing two hundred and thirty pounds weight for each barrel, which shows that upwards of forty thousand barrels, exclusive of the large quantity conveyed by the numerous Steamers, have left Fredericton this year for Woodstock, Tobique, and the Grand Falls, and during a season when Steamers were prevented from running in consequence of the low state of the River. I therefore think that every facility should be given to these Boats by making a sufficient "Towing Path" at the different Rapids; as it may be found after the principal obstructions in the River are removed, and unless there is a very different description of Steamers to those at present on the River, that "Tow Boats" are best adapted for the Saint John above Fredericton during the Summer months, or in low water; and more particularly as their model within the last two years has been so much improved as to enable them to carry a much larger and heavier load than formerly, with the same number of horses, (two), and making their trips in a less time."

The loss to the Steamers this Fall of the carrying trade to the upper Saint John, between 30 and 40,000 barrels bulk, exclusive of passengers, but including 6,000 barrels still remaining in Fredericton for want of conveyance, will, I hope,

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convince the proprietors of these Boats that they are not adapted to the River above Fredericton excepting during the freshet, owing to their great draught of water, from three to four feet, when in my opinion no Steamer should exceed thirty inches to run to Woodstock, and two feet to the Grand Falls, and a lesser draught would be desirable, as it might in all probability insure to the public the great accommodation of Steamers plying regularly through the season.

From information I have obtained respecting the Steamers on the Alleghany River, in the United States, I should say their model or description of Boat has many advantages over ours.

The fall or descent of this River is 708 feet in 274 miles, double the descent of the Saint John between Fredericton and the Grand Falls, and has numerous short crooks or ox-bows, so called. The Steamers are about 100 feet in length, 17 to 18 feet breadth of beam, $3\frac{1}{2}$ feet depth of hold, has side paddles, and also provided with a wheel at the stern, and float nearly equal to the breadth of the boat; also two working cylinders of $11\frac{1}{2}$ inches diameter. These Boats carry or tow sixty tons, and have carried 80 passengers, and 350 bushels of coals as a cargo, and the draught not exceeding 3 feet.

The mania for Railroads at the present day unfortunately appears to lead too great a proportion of the public in this Province to suppose that all water communication will very shortly be superseded by these Roads, and this opinion I am sorry to say, I have heard from persons whom I supposed were better informed with the geography of this Province, even if too indifferent to travel through it. But I would ask any reasonable person to place before him a Map of this Country, and follow the course of the magnificent River Saint John from its great emporium, the City, to the head of Lake Temiscouata, a distance of 300 miles, and within 36 miles of the Gulf of Saint Lawrence, and say that such a water communication, with its numerous inhabitants settled along its banks, can ever be superseded by any Railroad. I think never! and I will now go further to shew what a trifling expenditure of the public funds would be required to open the upper part of this communication for Steamers.

The obstructions in the Saint John from the Grand Falls to the entrance of the Little Madawaska, or Little Falls, so called, distant 36 miles, are very trifling, and will not require over £3,000 to remove them. Then at the Little Falls of the Madawaska, where a dam of two or three hundred feet in length, and from eight to ten feet in height, with one or two locks to enter the River from the Saint John, will in all probability cost £8,000; and again, to make the Little Madawaska navigable to the entrance or outlet of Lake Tamiscouta, a distance of 26 miles, about £1,000, when no further expenditure would be necessary, as the general depth of the Lake, which is about 30 miles in length and from half a mile to a mile and a half in width, is over fifty feet; and I have been told by persons resident there, that in some parts of it no soundings have been found at 200 feet.

It therefore appears that £12,000 would be sufficient to open this communication for Steamers to run regularly between the Grand Falls and the head of Lake Tamiscouta, a distance of 92 miles; and which expenditure would not only facilitate the settlement of that section of the Province, but rapidly improve the Towns of Colbrooke, Grand Falls, and Edmundston at the confluence of the Little Madawaska River.

In conclusion, I beg to state, that persons in charge of Tow Boats have informed me, that the improvements made in the navigation during the last four years, has enabled these Boats to increase their loads from ten to twenty five barrels, and also shortened the time of their trips between Fredericton and Woodstock nearly two days, and from that to the Grand Falls over a day, without any additional team of horses.

I have the honor to be, Sir,

Your most obedient servant,

J. A. MACLAUCHLAN,

*Commissioner for improving Navigation
of River Saint John.*

The Hon. Charles Macpherson,
Chief Commissioner of Public Works.

Appendix F.

SUPPLEMENTARY REPORT on the Bridge over the Missiquash, between Nova Scotia and New Brunswick.

Since the date of the Report on the Missiquash Bridge, page 41, the whole of the Accounts have been audited and passed, and some additional claims have been examined and paid. The annexed Statement contains the final Report from the Audit Office :—

Paid H. Gallagher, Contractor,	- -	£983 8 0
Do. for repairing old Bridge,		5 0 0
Chief Commissioner's travelling expenses in 1855,	- - -	8 5 0
S. C. Charters, Supervisor,	- -	68 8 0
Alex. Light, Engineering, Plans, &c.		30 10 0
		£1,095 11 0
Of which, due from Nova Scotia,	- -	547 15 6
Leaves cost to this Province of	- -	£547 15 6

C. MACPHERSON,

Chief Commissioner.

Office Board of Works, 10th February 1857.

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